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PAPER

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Southern Kraft To Build Mill In Louisiana

Will Start Work Immediately on Kraft Plant At Minimum Cost of $6,000,000 — Will Be the Largest Paper Mill In the South With an Annual Capacity of 220,000 Tons—Will Employ Between 2,500 and 4,000 People.

Baton Rouge, La., June 11, 1937.—Governor Richard W. Leche today signed a contract with the Southern Kraft Corporation, subsidiary of the International Paper and Power Company for a kraft paper mill to be constructed at Spring Hill, Louisiana, at a minimum cost of $6,000,000, which may eventually cost $12,000,000.

In line with the Governor's three point industrialization plan to attract new industries to the State, the properties will be property tax free for a period of 10 years. The plant will be used to manufacture kraft paper, pulp, paper board and allied products and by-products. It will be the largest paper mill in the South and will have an annual capacity of 220,000 tons.

To Be in Operation by January 1, 1939

The contract has been signed by J. H. Friend, vice-president of the Southern Kraft Corporation for the International Paper Company. It calls for immediate commencement of construction and must be complete and in operation by January 1, 1939. When in operation it will employ between 2,500 and 4,000 people.

A new industrial town is expected to be created by this new industry at Spring Hill, Webster Parish, which is about 50 miles north of Shreveport. The contract calls for housing facilities for employees in an area that is sparsely populated at present.

Several Southern States Competed

A number of Southern states have been competing for this new International Paper mill but the inducements held out by the State's unique industrialization plan overbalanced other offers.

A week ago Governor Leche announced that $12,000,000 in new contracts had been signed by 11 industrial concerns guaranteeing them from property taxation for ten years on newly constructed plants. This contract marks the latest and largest of these contracts.

Attracting New Industries

A three point program was presented to the Louisiana legislature last fall in order to make possible this much talked of formula for attracting new industries to the Pelican state. The first two points, speedily passed by the legislature, were: repeal of the state manufacturing tax and creation of a State Department of Commerce and Industry. The third was the ratification by popular vote of an amendment to the state constitution which permits the Governor to exempt all new industries and additions to existing plants from property taxation for a period of ten years. This amendment was adopted last November by one of the largest votes in Louisiana history.

Union Bag to Shut Down

Appleton, Wis., June 14, 1937.—The Union Bag and Paper Mill at Kaukauna, Wis., will be shut down June 19, according to a letter sent to employees June 10. The letter was signed by Alexander Calder, president of the corporations, which has its main offices in New York.

No mention was made of a possible resumption of operation. Dr. Karl Karlson, resident agent, is in New York and was not available for a statement. The mimeographed letter, addressed to "Kaukauna Employees," follows:

"Your help and cooperation for the past several years has stimulated our efforts to find some way to continue operations at Kaukauna and put them on a profitable basis. As you may know, the Kaukauna mill has lost money for the past few years.

"We have sent several experts to Kaukauna to study the situation. We have consulted with paper makers; have explored every available market to try to find commodities that we could make at a profit; and have considered buying new equipment, to find some way to continue production. All of these investigations have led to such negative conclusions that we are forced to close the mill on June 19, 1937.

"This situation is entirely beyond our control and it is with a great deal of regret that we make this announcement. Mr. Karlson, our residing agent, will talk to you personally about it. Our plan is to shut the mill down on June 16, but it may be necessary for us to continue some operations until the 19th. At any rate I have instructed the pay roll division that employees who are available for work until the shut down date, are to be paid up to and including June 19."

$200,000 To Be Spent In Port Arthur Mill

Included Will Be the Conversion of A Bigger Grade of Book Paper Than Previously Possible — Addition Has Been to Finishing Room Equipment to Handle Superior Equipment—R. C. Hill of Canadian Pad & Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., June 14, 1937.—A program of improvement to existing machinery and expansion which will call for the expenditure of approximately $200,000 in the Port Arthur mill of Provincial Paper, Ltd., has been approved by the directors, A. G. Pounsford, division manager, announced in Port Arthur this week. The work will start within a few weeks and will continue progressively as new machinery is delivered. With the exception of the building program and sub-contracts, the work will be undertaken almost entirely by the present staff of the mill, Mr. Pounsford said.

Included in the changes will be the conversion of No. 2 paper machine for the manufacture of a higher grade of book paper than was previously possible. No. 2 machine has previously manufactured half-tone paper, a grade higher than newsprint, but the installation of new equipment will make possible the manufacture on this machine of the best grades of book paper.

An addition will be made to the finishing room equipment to handle the higher grades of book paper. Changes will also be made to the water system of the mill, Mr. Pounsford said, to minimize the possibility of a shutdown such as was encountered during the past winter when the city water system was affected by ice conditions. While secondary power from the Hydro-Electric has been used in the heating plant, the increased use in primary power for industries has cut down the amount of secondary power available, and changes will be made in the boiler plant to permit the use of coal and waste refuse. A loading building or train shed for the sulphite mill will also be constructed. Most of the equipment has been placed on order, but as it takes from four to six months for delivery of some of the special equipment, this part of the improvement program will necessarily be delayed, Mr. Pounsford said. Other work will be proceeded with as rapidly as possible.

Mr. Hill Expands His Business

Roy C. Hill, president of the Canadian Pad and Paper Company, Ltd., 240 Madison Avenue, Toronto, has asumed the presidency and executive management of Eaton, Crane & Pike of Canada, Ltd., located, up to the present time, at 366 Adelaide Street West, Toronto. This company has moved into their new plant at 375 Madison Avenue which has been purchased by Mr. Hill. Norman A. Sinclair, who was instrumental in forming Eaton, Crane & Pike Company, Canada, Ltd., seventeen years ago, is retiring from any active part in the management owing to ill health. He will remain as vice-president of the company. John A. Johnston, who has been assistant manager of the company for the past five years, is now manager in charge of production.

The new building, which Mr. Hill has purchased, has about 50,000 square feet of floor space, with a frontage on Madison Avenue of 200 feet and is constructed of reinforced concrete. Eaton, Crane & Pike Company will occupy about 25,000 square feet of floor space as compared to 20,000 square feet in their former premises. They also hope to increase their present number of employees. The remaining space in the new building will be rented by Canadian Pad and Paper Company, whose plant is directly opposite the new Eaton, Crane and Pike premises.

Corrugated Paper Co. Expansion

Corrugated Paper Company, Ltd., Hamilton, Ont., have completed construction of an addition to their plant costing $5,000. The structure is one story and of brick and concrete construction, with sprinklers throughout. As only minor manufacturing operations will be conducted in the new building, production capacity will not be directly affected. It will, however, increase the efficiency and speed of the present manufacturing activities and should result in an increase of about 25 per cent in productive capacity.

Agreement Reached with Abitibi

An agreement is reported to have been reached finally between the Ontario Government and the bondholders' committee of Abitibi Power and Paper Company, regarding power questions and timber limits. If so, it may be expected that announcement of the bondholders' plan will be forthcoming promptly, unless, as has been intimated in some quarters, the committee lacks a majority of proxies. This would raise the question whether consent to the plan of the company's trustee would be given. It is hinted that the Wood, Gundy plan, presented some time ago, will be so altered as to make it more attractive to large common shareholders.

Technical Section Hold Summer Meeting

Members of the Technical Section Canadian Pulp and Paper Association made Toronto their headquarters for a day as part of the annual summer outing and meeting which was held at the General Brock Hotel at Niagara Falls. Under the direction and chairmanship of Dr. Rowley, head of the technical section, a number of sessions were held both in Toronto and at the Falls but most of the time was spent in inspection of paper and box making plants. In Toronto the delegates spent some time at the Firstbrook box plant of the Robert Gair Company of Canada and also at the plant of Hinde & Dauch Company of Canada, L. F. Winchell being the host.

At the Falls R. G. McDonald, secretary of TAPPI was on hand and Frank Laing, of the International Paper Company, at Tonawanda, N. Y., delivered an address on "Ideas and Practices in European Paper Mills". Most of the paper plants in the Niagara Peninsula were visited, including the Ontario Paper Company, Interlake Paper Mills and Provincial Paper Mills. The International Paper Mills at Tonawanda were also inspected by the gathering.

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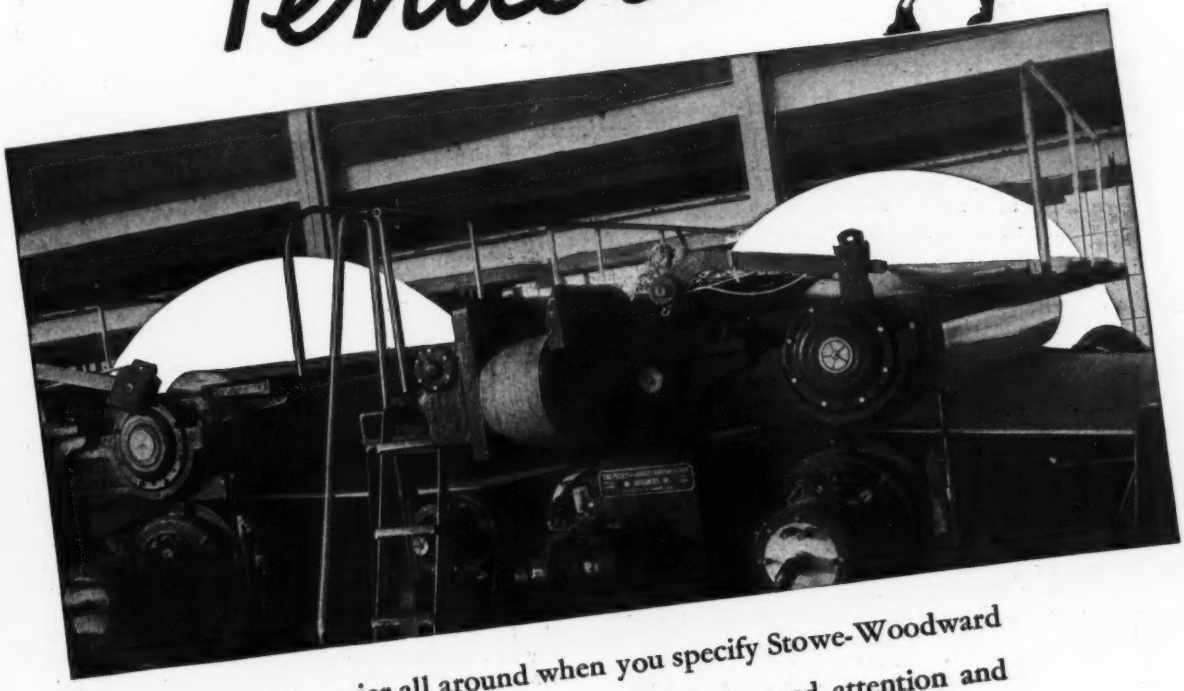

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Dr. Barrows Installed President of Lawrence

Had Assumed the Head of the College Informally and Had Acted As Chief of the Institute of Paper Chemistry Since Feb. 1 of This Year — On Test Vote Stevens Point Is Permitted to Assess to Flowage Rights.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 14, 1937.—Dr. Thomas Nichols Barrows was officially installed here June 11 as president of Lawrence College. He had assumed the presidency of the college informally and had acted as head of the Institute of Paper Chemistry since February of this year, when Dr. Henry M. Wriston vacated those offices by becoming president of Brown University, Providence, R. I.

At the investiture ceremonies in the morning at Lawrence Memorial Chapel, Dr. Barrows received the charter of the college and the chair of Amos Lawrence, founder of the college, as insignia of office, from C. B. Clark, Neenah, president of the college board of trustees and president of the Riverside Paper Company, Appleton.

Mr. Clark had been elected president of the board of trustees the previous day, succeeding the late W. H. Hatten, New London, Wis. William E. Buchanan, Appleton, vice president and sales manager of the Appleton Wire Works was elected trustee to fill the vacancy caused by Mr. Hatten's death.

Pledges of allegiance and expressions of confidence were given to Dr Barrows in a series of short addresses by representatives of the student body, alumni, faculty members and members of the Institute of Paper Chemistry.

Ernst Mahler, Neenah, vice president of the Kimberly-Clark Corporation and president of the board of trustees of the Institute of Paper Chemistry, pointed out that while the Institute is separate from the college, both financially and from the standpoint of buildings, equipment and faculty, the two are invariably associated and the president of Lawrence College automatically becomes the chief administrative officer of the Institute. He expressed the belief that under the guidance of Dr. Barrows, the educational program of the Institute will continue to be one of real substance and that the balance between industry, research and education will be maintained.

Mr. Clark reviewed the events following the announcement to the board of trustees of Dr. Wriston's resignation last fall, and explained that the board sought as his successor a man who was familiar with the purposes and ideals of Lawrence, in order that there might be no lapse in the progress which had been so marked in recent years.

In his annual report to the board of trustees of Lawrence College, Dr. Barrows noted further increases in the staff and student body of the Institute of Paper Chemistry, and pointed out that the budget has been increased by 10 per cent, bringing it to more than a quarter million dollars. "Since it was founded in 1930," he said, "the staff of the Institute has increased from 4 to 75, its buildings and equipment from nothing to nearly $850,000, its mill membership from 19 to 59, and its student body from 3 to an anticipated 51 for next year.

"The Institute has grown now to distinctly national proportions. Its membership represents nearly two-fifths of the entire tonnage of paper now being manufactured in the United States."

Dr. Ben Wright Rowland, research associate at the Institute of Paper Chemistry, was a member of a group speaking before the National Colloid Symposium at the University of Minnesota, June 10 to 12, inclusive. He presented a paper under the title, "Colloid Chemistry in Paper-Making." The paper dealt with types of fundamental investigation in the colloid field such as is undertaken in the study of paper-making by such agencies as the Institute. Dr. Rowland, as a graduate student, delivered a paper before the first colloid symposium ever held, at Madison in 1925. He has been a member of the faculty of the University of Colorado, of the University of North Dakota and of the University of Wisconsin and has also served the Bureau of Mines and the Goodyear Rubber Company as a chemist. He has been connected with the Institute of Paper Chemistry since 1930.

Assembly Indicates Approval

On a test vote the assembly last week indicated approval of a bill to permit the city of Stevens Point to assess the flowage rights of private corporations for taxation purposes. The bill was ordered to a third reading with passage as the next step.

The bill would permit Stevens Point to assess and tax flowage rights along both sides of the Wisconsin River against the Wisconsin River Paper and Pulp Company. The paper company, according to the city assessor, purchased the flowage rights some years ago, at the time the company raised the head of water at its dam. The assessor found there was no Wisconsin law authorizing local taxation of flowage rights of a private corporation. A similar bill was killed in the Wisconsin assembly about six years ago, and another was passed two years later by the assembly but killed by the senate.

Flowage property of the Consolidated Water Power and Paper Company would not be affected, as the company is classed as a public utility and assessment is made by the state tax commission.

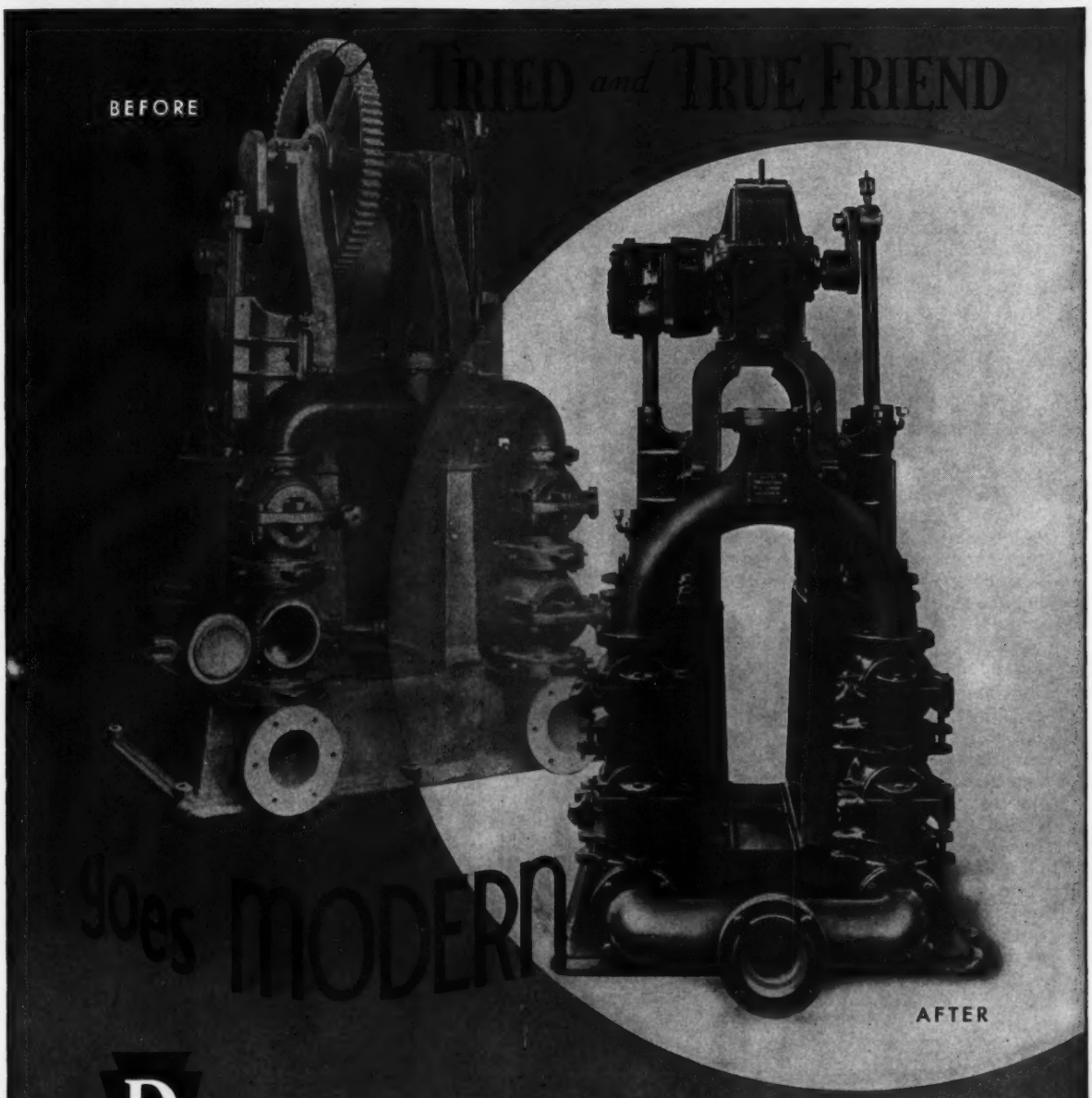
Eleven All-Paper Cabins

Eleven all-paper cabins which will be used to house Boy Scouts at the national jamboree at Washington, D. C., have been constructed by about twenty scouts of the Valley Council and Oshkosh councils. The work was completed with the assistance of the Thilmany Pulp and Paper Company employees at Kaukauna. All cabins are 16 feet long and 14 feet wide, and eight scouts can be housed in each.

G. J. Schneider Returns

Representative George J. Schneider, Appleton, vice president of the International Brotherhood of Papermakers, has returned to Washington after discussing labor problems from a congressional point of view before the Quebec Provincial Council of Papermill Unions. He spoke at a banquet and meeting of the group in Three Rivers.

DOWNINGTOWN



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Compare the phantom photo of the old, with the picture of the new Keystone Direct Motor Driven Stuff Pump. Note that the modernized design eliminates exposed gears, belts, tight and loose pulleys, thus saving power, minimizing noise and reducing upkeep costs. The "Direct Driven" Pump is a complete, self-contained unit, which can be set up anywhere. The herringbone speed reducer, running in oil, has a built-in motor. Cranks are mounted on a double, extended slow speed shaft. Simply select a size large enough to do your work at 25 revs. or less and and you can feel assured of modern, trouble-free service. The Downingtown Mfg. Co., Downingtown, Pa.

ALL SIZES—ALL CAPACITIES—DUPLEX AND TRIPLEX

Boston Paper Outing Proves Big Success

Outing At the Charles River Country Club, Newton Centre, Huge Approval — Fair Volume of Paper Transacted — Bird & Son, Inc., Install New Westinghouse Drive — Fine Paper Div. Holds Successful Meeting.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 14, 1937.—With towards 200 present, including many manufacturers, the regular June meeting and outing of the Boston Paper Trade Association, held Monday at the Charles River Country Club, Newton Centre, Mass., was a big success. The day was generally fair, although a shower took place during the latter part of the afternoon, terminating the ball game. Golfers were on hand early in the day, with a large number participating, teeing off from 8:30 a. m. to 2 p. m. A buffet luncheon was served at the locker building from 11:30 on and dinner at the club house at 6:45 o'clock. The facilities of the club were at the disposal of the members of the association and their guests all day.

After a delicious dinner, a brief business meeting was held, with President F. Bendel Tracy presiding. The following were voted in to regular membership: Fred E. May, Housatonic, Mass., proposed by Walter J. Raybold; Henry C. Barr, Boston, proposed by Norman Harrower. C. W. Harvey, Boston, proposed by John L. Munro, whose name appeared on the announcement, had been voted in at the previous meeting. The following were voted in to "limited" membership: Walter A. Lowe, Fitchburg, Mass., proposed by Norman Harrower; Eldon S. Chapman, Fitchburg, proposed by Mr. Harrower, and F. H. Masselink, Boston, proposed by Willard H. Loud.

Valuable prizes of sterling silver were awarded to winners at golf, with W. J. McLellan, chairman of the golf committee, making the announcements. A new name was added to the list of winners of the handsome silver golf championship cup, offered by the Boston Paper Trade Association for the first net, Class A, that of E. E. Ketchum, of Southern Kraft International. This was the 16th year's play for the cup, which must be won three times to become the permanent property of the winner. The cup remains in the custody of the winner of the best net score until the succeeding year's play and until such time as someone shall have won it three times.

Other victors at golf included the following: Class A Handicap, 20 and under, 1st gross, J. R. Whitney, Springfield; 2nd net, Fred Burkhardt; 3rd net, Handicap, 21 to 28, E. L. Cummings. Class B, 1st gross, Fred Korbel; 1st net, Walter Sheehan, Missisquoi Pulp & Paper Company, 2nd net, Karl Ways; 3rd net, C. F. Howarth, Linton Brothers. In the Class C. Handicap, 28 and over, best selected nine holes, L. Claflin was the winner. In the kicker's handicap, George Hoyt was the victor.

Valuable prizes were awarded to the following: Largest number of twos, W. N. Stetson, Storrs & Bement Company; largest number of threes, Gorham Bliss, Worthy Paper Company; fours, W. H. Bruckhauser; fives, Norman Harrower; sevens, Wallace Marston, Keith Paper Company, and eights, John W. Vivian. The prize for the highest score went to W. H. Lockhart as a consolation.

The golf committee was composed of W. J. McLellan, chairman, E. D. Bement, Nelson Feeley, Bruce Crane, W. Edwin Porter, Jr., and John R. Whitney.

Handsome and useful prizes were awarded as follows to the winners in the outdoor sports, which began at 2 p. m. Horseshoes, with R. P. Teele in charge, 1st, Edward A. Sitzer, president of Huribut Paper Company; 2nd, Lee H. Hulett, sales manager Chemical Paper Company. Putting, with W. C. Ross in charge, 1st, Fred W. Main, Worthy Paper Company; 2nd, Frank B. Cummings, treasurer, New England Paper Merchants Association. Bowling, E. S. Reid in Charge, Carl F. Werner, guest prize; 1st, Willard H. Loud, Stimpson & Co., Inc.; 2nd, Kenneth Moses, New England representative, St. Regis Paper Company. The baseball game, with W. G. Very in charge, was won by a team captained by Earl Clark with a score of 5 against that of 1 made by a team captained by Willard H. Loud. The sports committee was composed of those mentioned in charge. In the drawing for a set of golf clubs, the prize went to George Olmsted.

Officers of the Boston Paper Trade Association are F. Bendel Tracy, president; Walter J. Raybold, first vice-president; John L. Hobson, second vice-president; T. Charles Casey, treasurer, and John H. Brewer, secretary.

Paper Business Fairly Active

Varying statements were made in regard to the wholesale paper situation in Boston. It is estimated that a fair volume of business was transacted during the last week. Bristols, glassine and tags were mentioned as advancing, the first two noted going up a half-cent. Comments from fine paper merchants in regard to the market included "rather inactive," "eased off," "fair," "a little more active," and "very good." In the wrapping paper division, such expressions as "eased off" and "very good" were heard. It was stated at the office of a manufacturer that paper for bag purposes was moving well. Paper specialties were sold in from fair to good volume. Box board was rather dull.

The paper stock market was generally easier, with manufacturers apparently well supplied with material for the time being. Declines were registered in a portion of the grades of old papers, bagging, new domestic rags, old domestic rags and foreign rags. Some 20 price changes took place, most of which were downward. Under bagging quotations for scrap sisal varied, one being 2.40 @ 2.50 and another 2.25, compared with a former range of 2.60 @ 2.75. Similarly for scrap sisal for shredding two ideas of value were expressed, one being 2.60 @ 2.75 and another 2.40 @ 2.50, against a former quotation of 2.75 @ 3.00. The only change in foreign rags was in dark cottons, which declined to 1.50 @ 1.60 from

(Continued on page 30)

Importation of Print to Bombay Legislated

Despatch From India Urges Free Duty on Ground That It Is Pure Necessity — Anglo-Newfoundland Development Controlled by British Interests — The International Paper Co.'s Operations On A Restricted Output.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 14, 1937.—Considerable interest has been aroused here by a despatch from Bombay urging the free importation of newsprint on the ground that it is a public necessity. The despatch says that 23 leading newspapers of India, both English and vernacular, have addressed a joint letter to the Government of India urging revision of the present 25 per cent ad valorem duty on imported newsprint in view of the recent 66 per cent increase in the cost of the commodity. The price of newsprint in reels, c.i.f. Calcutta, states the letter, has risen from $45 per ton to more than $75 in the past year. Recent quotations are nearly $80 per ton.

Great Britain, the United States and France are pointed to as countries admitting newsprint free of duty in recognition of the essential public service performed by the press. At a time when India is embarking on a new constitutional era, it would be deplorable, it is urged, if the electorates which must be instructed receive less news and less comment.

"We have good grounds for apprehending," continues the letter, "that unless the trend of prices is reversed—and of this we see no prospect—useful newpapers will be driven out of business."

Newfoundland Expanding Newsprint

From Newfoundland it is reported the newsprint, which in the past 12 years has developed into the Island's outstanding industrial activity, now competes with the fisheries as the most important source of wealth in the country. Newsprint manufacture is carried on by two companies—the Anglo-Newfoundland Development Company, controlled by British interests, and the International Paper and Power Company, of Newfoundland, which is affiliated with companies here and in the United States.

The Anglo-Newfoundland Company, whose plant is at Grand Falls, produced about 160,000 tons of newsprint last year, paying out in wages considerably over $3,000,000. The entire output of the mill is sold to the Rothermere interests in England, who control the company. The plant has been working at capacity for a long time, and this year a further program of expansion is being carried out. It is expected that the extensions will entail an expenditure during the current year of $2,500,000. One of the principal projects is a hydro-electric power development, doubling the size of the existing intake installation. Improvements will be effected to the grinding plant and the newsprint machines and an unbleached sulphite system will be installed.

The International Paper Company's operations last year were on a restricted basis until the end of April owing to an accident at the power plant. In repairing the damage and effecting further improvements at the newsprint mill, the company spent nearly $700,000 during the past year, and the possibility is now being discussed of increasing the capacity at the Corner Brook plant, one or possibly two additional machines being spoken of.

The long-talked-of proposition for another newsprint mill on the Gander timber areas is still very much in the air. One official of the Government has expressed the view that while existing mills could probably double their output by the expenditure of a million or so of capital it was difficult to induce investors to spend some $25,000,000 or $30,000,000 on a new mill.

Powell River Workers Join Union

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., June 14, 1937—Locals of two unions affiliated with the American Federation of Labor were recently organized at Powell River, B. C., under the direction of Harvey H. White, Everett, Wash., representative of the International Brotherhood of Pulp, Sulphite and Paper Mill workers, and the International Brotherhood of Paper Makers.

The organization marked the entrance into Western Canada's pulp and paper industry of the American Federation of Labor, and was the first step in a unionization program of the entire B. C. industry, which will lead eventually, it is expected, to alliance of the industry in B. C. with the 14,000 unionized workers along the Pacific Coast of the United States.

It is planned to begin organization of plants at Ocean Falls, Woodfibre, Port Alice and Port Mellon in the immediate future, and when this organization is complete wage scales will receive attention of union officials. A new agreement between union men in the United States and the North West Employers' Associations recently set a new basic wage scale of 62½ cents as at June 1, to replace the present scale of 52½ cents. The British Columbia scale, based on a 48-hour week instead of the 40-hour week in the United States, will be adjusted proportionately.

At the plant of the Powell River Company, 1350 men were eligible to vote on the question of affiliation with the Union. Of this number, 1132 voted in favor and 106 against.

Guatemala Buys More Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 16, 1937—Guatemala is entirely dependent on outside sources for all types of paper used in the country. Whereas the imports of any particular type of paper vary somewhat from year to year and frequently do not follow any general trend, import figures indicate a steady increase in the total consumption of paper during the past four years. The most notable feature in this trade during recent years has been the tremendous gain made by Germany as a source of supply. Germany has always been a factor in the paper trade of Guatemala, but during 1935 to 1936, rose to the dominating position as the supplier of paper to this market. Largely as a result of this competition imports from the United States have dropped to a very marked extent, particularly in the more important items.

Paper Products & Converters Group Meet

H. L. Brunner To Speak Upon Credit Cooperation Within Our Industry —T. W. Peck to Address Gathering On Present Outlook for Industry — Paper Takes Surprising Turn—E. H. Naylor Takes Charge of Meetings.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., June 14, 1937.—While trading in the local paper industry was quite persistent during the preceding week the outlook for the future was much more impressive due to the prevalent opportunity.

Program for Converters' Meeting

MONDAY AFTERNOON, JUNE 21. 3:00 p. m.—Meeting Called to Order, Roll Call—H. K. Crawford, presiding. 3:30 p. m.—Credit Cooperation Within Our Industry. Discussion led by Herman L. Brunner, Central Fibre Products Company, Inc., Chicago. 4:00 p. m.—Effect of Credit on Current Developments Within Our Industry. Discussion led by R. O. Brosius, Gardner-Richardson Company, Middletown. 4:30 p. m.—Sales Conscious Credit Executive and His Cooperation With the Sales Department. Discussion led by Russell C. Flom, Menasha Products Company, Menasha.

TUESDAY AFTERNOON, JUNE 22. 12:15 p. m.—Group Luncheon. Herman L. Brunner, presiding. 1:00 p. m.—Address—"The Present Outlook for Our Industry" by Thomas W. Peck, Secretary, Kalamazoo Vegetable Parchment Company, Kalamazoo. 2:00 p. m.—Carrying of Customers Stock in Our Warehouses. Discussion led by W. E. Ritchie, W. C. Ritchie and Company, Chicago. 2:30 p. m.—Address—"Insurance in Relation to Credit Men's Debtor and New Lines of Cover" by J. J. Ferguson, Fireman's Fund Insurance Company, Chicago. 3:00 p. m.—Address—"Human Side of a Financial Statement" by Rhae W. Swisher, C.P.A., McClure, Hadden and Swisher, Chicago. 3:45 p. m.—Credit Department Procedure. Discussion led by G. J. Christiansen, Hummel and Downing, Milwaukee. 4:15 p. m.—Election of Officers.

Many Bills Still In Hopper

The Illinois Legislature moves to a close with many bills affecting State paper interests still in the hopper. Out of the "jam"—with 1,500 bills still on the calendar—may come several Acts which will add materially to the cost of doing business in Illinois. For example, House Bill 286, increasing workmen's compensation rates an average of about 25 per cent, moved out of committee and is being pressed by labor. At the same time the women's eight hour bill, putting a limit of eight hours on the work of women in Illinois, went through second reading in the House without any saving amendments to employers. The bill has already passed the Senate and will probably pass in its present form. This will add appreciably to costs in many quarters. At the same time, the Senate is deferring action on S. B. 426 which would initiate the "use tax" in Illinois with prospects that delay will prevent passage. The "use tax" is designed to protect Illinois firms under the sales tax from outside-the-state competition. S. B. 427 which would, if passed, probably re-define the ultimate consumer under the sales tax and bring printing, lithography and other graphic arts under the tax, is not moving rapidly and may stall of its own weight in the final two weeks of the session. Most other licensing and taxation bills which have had Chicago worried, including S. B. 302 which gives the city of Chicago power to tax for revenue, will probably be lost in the final jamming of the two houses.

Paper Takes Surprising Turn

The Chicago paper market took a rather surprising turn for the better during the week just past with demand broadening out and reports from all sides indicating a resumption of improvement rather than an extension of summer slumps. Perhaps bristols had a part to do with the better situation as these grades moved appreciably toward higher ground. In addition, certain groundwood reports from Chicago offices evidenced a slight increase with the undertone firm. Otherwise, the basic characterization of Chicago's paper market was "more firm" and "outlook improved". This characterization applied to the entire run of fine papers where bonds and ledgers, writings, sulphite and other grades were lumped into a satisfactory week with certain mills taking up an appreciable amount of slack. Books and covers had a good six days with demand assuming a more definite rather than spotty appearance. Boards were reported in fair demand. The waste paper markets reflected the better tone in only a slight degree as commitments in most grades were reported as giving evidence of being filled up.

H. L. Brunner Praises Credit Men

The National Association of Credit Men will hold the spotlight during the latter part of June when nearly 5,000 credit and financial executives assemble at the Stevens Hotel on June 21 and 24 to consider problems of extreme importance to industry in general. The paper industry will be well represented as the influential Paper Products and Converters Group plans a two days' program with a concentration of effort on matters confronting the paper industry in general.

According to H. L. Brunner, of the Central Fibre Products Company, a national vice-chairman, hundreds of representatives of the paper industry have already signified their intention of attending the June 21 and June 22 meetings devoted to credit cooperation, the effect of credit on current developments within the paper industry, etc.

Naylor Takes Charge of Meetings

Chicago was host to quite a number of mill executives during the past week as members of the Writing Paper Manufacturers Association met in this city and while members of the Board of Governors of the American Paper and Pulp Association moved on to Neenah for the June 3 sessions. The Writing Paper Manufacturers, rag content group, held important sessions on June 2 and June 3 with Emmett Naylor in charge of the meetings.

the ADKA WHITE WATER SAVEALL

ADVANTAGES •

1 • Higher recovery of fibre and filler—95% and upwards.

2 • Direct return of stock to paper machine without causing variation in sheet weight.

3 • Shows actual decrease in mill shrinkage.

4 • Handles color and furnish changes without emptying.

5 • Only 5-10 minutes flow in unit, hence easy shutdown for week-end wash up.

6 • Requires no "sweetener" stock.

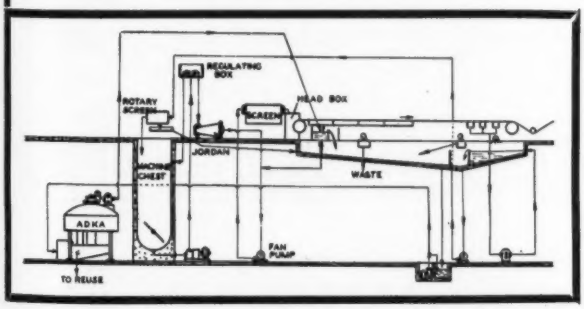
7 • Low power consumption; 1-3 H.P., depending on size.

8 • Low operating and maintenance cost.

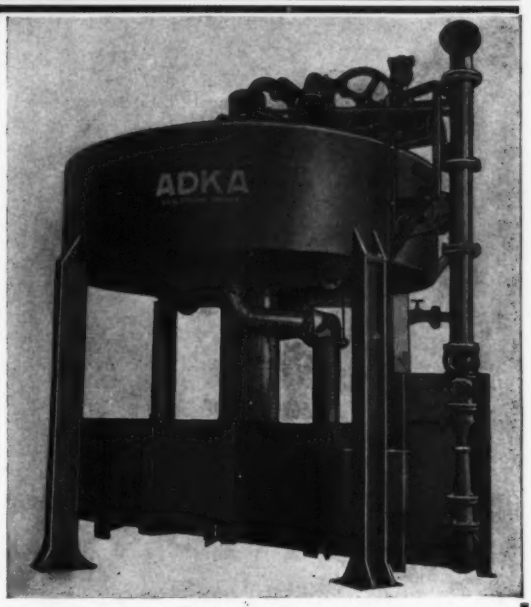
DORRCO

The Dorr Company takes pleasure in announcing its acquisition of exclusive sales and manufacturing rights to the ADKA White Water Saveall in the United States, Canada and Japan.

The ADKA Saveall is a fully developed commercial unit for recovering from white water, first, fibre and filler for re-use, and second, a clear water for return to process. 165 units are in successful operation in Europe, and 8 installed or on order in the United States.



Typical ADKA hook-up with a paper machine



An ADKA Saveall

PRINCIPLE •

The ADKA Saveall operates on a new and unique principle developed by Adolf Karlstrom, a Swedish engineer, and never before applied to white water treatment in this country.

The white water, after special preliminary flocculation, is aerated with the result that, when pressure is later reduced, the solid particles are caused to rise rapidly to the surface. Operation is, of course, continuous, as also is the removal of the solids through a suction pipe, close to the surface.

SIZES •

ADKA Savealls are supplied in 9 different sizes, ranging from 8 ft. to 21 ft. 6 in. in diameter and corresponding to white water flows ranging from 100 to 1100 gallons per minute.

Write to our nearest office for our bulletin on the ADKA Saveall.

THE DORR COMPANY INC.

ENGINEERS • 570 Lexington Ave., New York

CHICAGO • TORONTO • DENVER • LOS ANGELES • ATLANTA

DORR TECHNICAL SERVICES AND EQUIPMENT ARE AVAILABLE FROM THE FOLLOWING COMPANIES:

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FRANCE: Soc. Dorr-Oliver, Paris
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ENGLAND: Dorr-Oliver Company Ltd., London
AUSTRALIA: Crossle & Duff Pty. Ltd., Melbourne
SOUTH AFRICA: Edward L. Bateman Pty. Ltd., Johannesburg
JAPAN: Sanki Engineering Co., Ltd., Tokyo
ARGENTINA: Luis Fiore, Buenos Aires
BRAZIL: Oscar Taves & Co., Rio de Janeiro

Philadelphia Association Moves Resolution

Adopts Sincere Sorrow and Extends to Mrs. Donahue Its Heartfelt Sympathy—J. L. N. Smythe Company Will Occupy New Quarters At 1600 Callowhill Street—Schmidt & Ault Paper Co. Announce Appointment.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., June 14, 1937—At a meeting of the Philadelphia Paper Trade Association held during the week, the Board of Governors suggested that a fitting resolution on the death of Harry F. Donahue be adopted and presented to Mrs. Donahue. Accordingly the following resolution was offered:

Whereas, it has pleased Almighty God to remove from our midst our esteemed co-worker and former member of this board, Harry F. Donahue, and

Whereas, by reason of the loss of his wise counsel and his interest in the affairs of this association for many years, and

Whereas, we desire to bear witness to the sterling qualities and principles of the deceased, exemplified in the affairs of this association

Be it Resolved that we express our sincere sorrow and extend to Mrs. Donahue our heartfelt sympathy . . . and

Be it Further Resolved that this be spread upon the minutes of the association and copy thereof be sent Mrs. Donahue.

Smythe Co. Occupy New Quarters

The J. L. N. Smythe Company will occupy its new quarters at 1600 Callowhill street on Saturday of this week, where they will be open for business on Monday, June 21. They will occupy approximately 1,600 square feet of floor space. The first floor will be devoted to offices of the executives and salesmen; the mezzanine will be occupied by clerks, accounting department, mail order department and filing department. Cutting machines, board machines, etc., will be located on the second floor. Immediately adjoining there is a commodious warehouse which affords splendid facilities for loading and unloading trucks inside the building. Mr. Smythe pointed out that the Reading Railroad is just across the street which will enable them to receive and ship paper with a maximum of speed.

On Saturday, June 13, executives and employees of the J. L. N. Smythe Company in the number of thirty-six motored to the farm of Mr. and Mrs. L. C. Martin at Glassboro, N. J., where they participated in outdoor games and picnic spread on the spacious lawn of Mr. and Mrs. Martin, who incidently were former employes of the J. L. N. Smythe Company.

This was also the occasion of the twenty-fifth anniversary of B. F. Dobleman, shipper of the J. L. N. Smythe Company. The company presented him with a suitably engraved gold watch in token of their appreciation of his continuous services covering the above period. Mr. Dobleman was accordingly inducted into the 25-year Club of the J. L. N. Smythe Company, making the sixth member to attain that honor with this firm, each of whom by the way is still actively engaged with the J. L. N. Smythe Company.

Schmidt & Ault Announce Appointment

Schmidt & Ault Paper Company, of York, Pa., have addressed the following letter to the paper industry: "We are pleased to announce the appointment of Leonard Fitzgerald, as our Philadelphia representative. His offices are located at Room 887, Drexel Building, Philadelphia. Telephones: (Bell) Lombard 1181—Keystone (Main 8000), S. Spangler, sales manager."

George E. Randall Retired

George E. Randall, connected with the Wrapping Paper Department of Paper Merchants, Inc., retired on June 10, after thirty-five years of continuous service.

Mr. Randall originally was employed in 1898 with Walkley, Riegel & Huff, which concern became Riegel & Co., Inc. and now known as Paper Merchants, Inc. Mr. Randall closes an active busines career, loved and respected by all his associates and those who were privileged to know him.

The executives and old associates of his in Paper Merchants, Inc. assembled in the President's office, where Mr. Winfield Predmore, president, presented him with a beautiful gold watch on behalf of the company and all of Mr. Randall's associates. The inscription on the watch reads as follows: "1898-1937 Presented to George E. Randall by all your associates, Paper Merchants, Inc., Philadelphia. As a token of your service and friendship."

Mr. Randall's absence from the company's family will be felt keenly by Winfield Predmore, president, and J. G. Seckel, vice-president; they have been associated together respectively thirty-one and thirty-five years.

D. K. Shelly & J. J. Shoffer Wed

Dorothy K. Shelly and John J. Shoffer, employees of the Hooper Paper and Twine Company will be married on Saturday, June 19, at Tabor Reformed Church, Olney. After a wedding reception at the home of the bride, 724 York Road, Willow Grove, the couple will leave for a trip in the White Mountains.

Interest Shown in Pulp Investigation

WASHINGTON, D. C., June 16, 1937—A great deal of interest attaches to the pulp investigation being made by the United States Tariff Commission as the result of a Senate resolution.

The Commission has already been working on this report for some 20 months. The field work is understood to have been completed months ago but there has been delay in writing the report. Officials of the Commission do not say when it will be submitted to Congress.

Everett Buys S & W Undercuts

Smith & Winchester Manufacturing Company shipped a 32,000 pound carload of paper machinery to the West Tacoma, Wash., plant of Everett Pulp and Paper Co. The shipment included 86 inch and 74 inch S. & W. Undercut trimmers.

Dilts

- **HYDRAFINER — built by Dilts — high speed unit designed for continuous or batch operation.**
- **REFINES — by impact — brushing — hydrating — cutting — agitating — and under pressure where desired.**
- **FLEXIBLE — combining all refining actions — which completely defibrizes specks — in one small compact machine which may be used alone or with present equipment.**

Write for details regarding our able engineering assistance.

DILTS MACHINE WORKS INC., FULTON, N. Y.

Financial News of Pulp and Paper Industry

Kimberly-Clark Corp. To Consider Big Bond Issue At Special Meeting At Neenah, June 19 — Control of Brown Co. Is Said To Be Sought By Group of British Interests — Robert Gair Co. Declares 75 Cent Dividend

New York Stock Exchange

High, Low and Last for the Week Ending June 16, 1937

	High	Low	Last
A. P. W. Paper Co.	8	7	7¼
Armstrong Cork Co.	66¾	61	61
Celotex Corp.	45½	40	43
Celotex Corp., pf.	76½	75½	75½
Certain-Teed Products Corp.	15½	13¾	13¾
Certain-Teed Products Corp., pf.	61	55	56
Champion Paper & Fibre Co.	63¼	59	60
Champion Paper & Fibre Co., pf.	108¼	108¼	108¼
Congoleum Nairn Co.	36¾	35½	36
Container Corp. of Amer.	28¾	26½	27½
Continental-Diamond Fibre Co.	21½	19¼	20
Crown Zellerbach Co.	19¾	17¾	17¾
Crown Zellerbach Co. cum. pf.	99	99	99
Flintkote Co.	31	28	28¼
International Paper & Power (a)	19½	17½	17½
International Paper & Power (b)	13¾	12	12½
International Paper & Power (c)	7¼	6⅜	6⅜
International Paper & Power pf.	108	101¾	101¾
Johns-Manville Corp.	129¼	122¾	122¾
Johns-Manville Corp. pf.	124	124	124
Kimberly-Clark Corp.	38½	38½	38½
Masonite Corp.	52	49½	50
Mead Corp.	27¾	26¼	26¼
Mead Corp., pf.	97	94	94
Paraffine Companies, Inc.	67	65	67
Paraffine Companies, Inc., pf.	100	100	100
Scott Paper Co.	40	39¼	39½
Sutherland Paper Co.	34½	33⅓	33⅓
Union Bag & Paper Corp.	73¾	70½	73
United Paperboard Co.	11¼	9¼	9¾
U. S. Gypsum Co.	109½	103½	106
U. S. Gypsum Co., pf.	161	161	161

New York Curb Exchange

High, Low and Last for the Week Ending June 16, 1937

	High	Low	Last
American Box Board Co.	21¾	19	20
Brown Co. pf.	84	79¾	84
Great Northern Paper Co.	42¼	41	41
St. Lawrence Corp.	12⅜	12	12
St. Regis Paper Co.	8⅜	7⅜	7½
St. Regis Paper Co., pf.	97	97	97
Taggart Corp.	11½	10	10

K. C. to Authorize $20,000,000

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., June 14, 1937.—Stockholders of Kimberly-Clark Corporation, Neenah, Wis., will consider authorization of a $20,000,000 bond issue at a special meeting to be held at Neenah Saturday morning, June 19.

The following proposals will be considered, according to the call issued to the preferred and common stockholders:

"1. That the corporation authorize the issue of its first mortgage bonds . . . in such principal amount not exceeding $20,000,000 at any one time outstanding as said meeting shall determine, and that the corporation presently issue and sell $10,000,000 principal amount of said bonds to be dated as of June 15, 1937, and to be known as its 4¼ per cent 15 year sinking fund bonds, series of 1937, part of the proceeds of the sale thereof to be used for the refunding of the corporation's first mortgage 5 per cent gold bonds, 'series A,' presently outstanding in the principal amount of $5,318,000 and the balance of such proceeds to be used for general corporate purposes.

"2. That the corporation execute and deliver a supplemental indenture securing said bonds and supplementing, modifying and altering in such manner as said meeting may approve, the terms of the indenture heretofore made by said corporation to First Wisconsin Trust Company and George G. Lehman, as trustees, dated July 1, 1938, and a supplemental indenture between said parties dated March 18, 1931.

"3. That the corporation mortgage and pledge all the properties and assets of the corporation, with such exceptions as said meeting shall determine, under said indenture and supplemental indentures as security for said bonds and for the obligations of said corporation under said indenture and supplemental indentures."

Brown Corp. Reorganized

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., June 14, 1936.—Reports regarding progress in the reorganization of the Brown Corporation have been appearing in the papers here. The company has at La Tuque, Que., a sulphate pulp mill with a daily capacity of 600,000 lbs. of bleached and unbleached kraft fiber.

Despatches from Portland, Me., where the president's office is situated, quoted from the *Portland Evening News* a copyrighted story to the effect that control of the company is being sought by a small group of British interests headed by Lord Rothermere.

The object is said to be the acquirement of a new source of rayon pulp for use in England and an investment of an estimated $10,000,000 is spoken of. If the plans go through it is hinted that members of the Brown family would be restored to control of the company.

Freeport Earns 66c in First Quarter

First quarter earnings of 66 cents a share on the 796,372 shares of common stock were reported June 10 by Langbourne M. Williams, Jr., president of the Freeport Sulphur Company, in a letter to stockholders. This is after provision for dividends on the preferred stock.

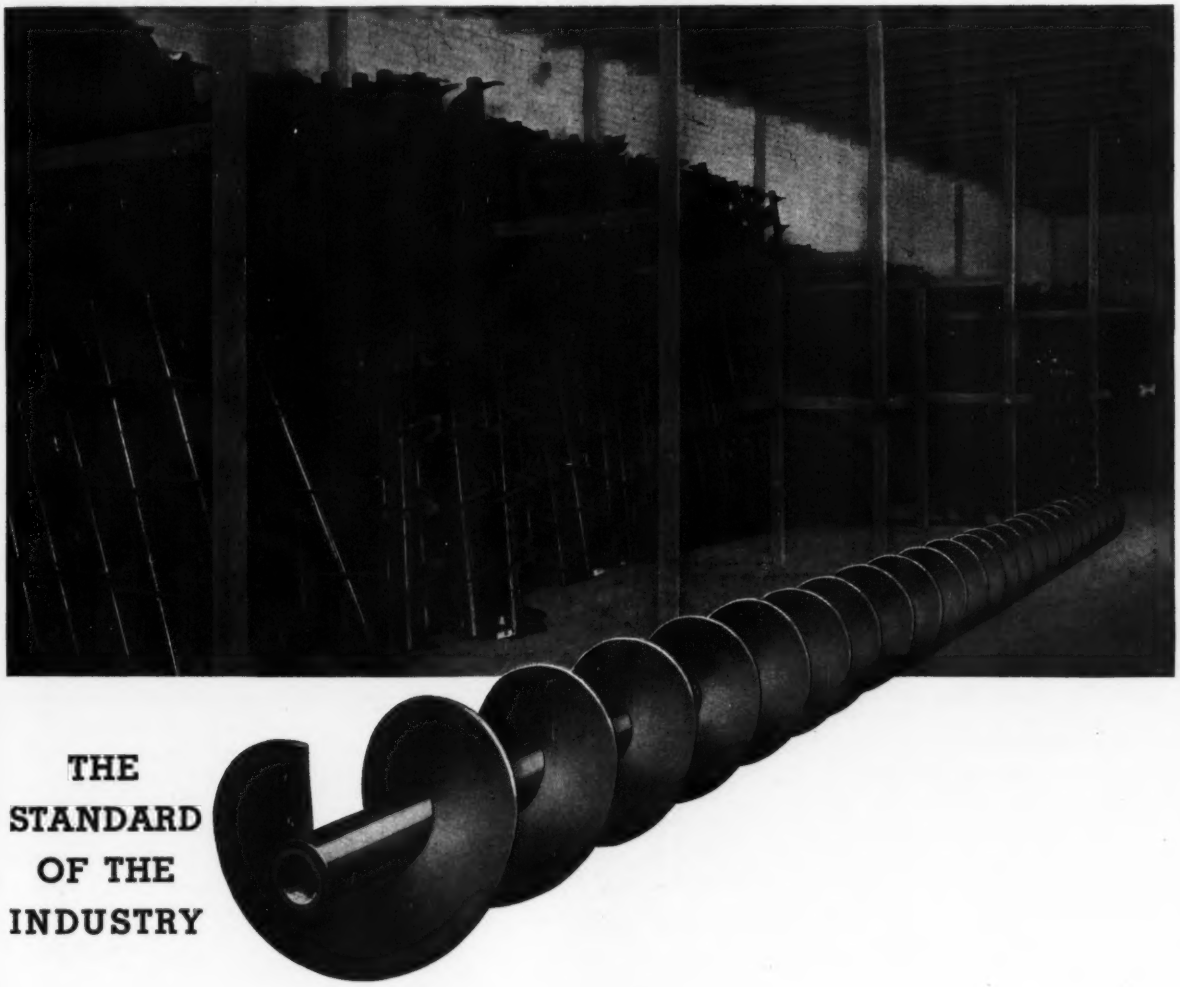
Net income of the company for the quarter ended March 31, after all charges including depreciation, depletion and Federal taxes but before surplus tax on undistributed income, amounted to $543,287. This compares with earnings of $476,123, or 57 cents a common share for the first quarter of 1936.

The above figures are shown after deduction of the proportionate part of the losses of the Cuban-American Manganese Corporation, subsidiary of the Freeport Sulphur Company, whose proportion of these losses amounted to $174 for the first quarter of this year as against $32,417 for the first quarter of 1936.

Robert Gair Pays 75 Cents

A dividend of seventy-five cents a share upon the preferred stock of Robert Gair Company, Inc., was declared at a meeting of the Board of Directors last week. The dividend is payable June 30, 1937, to preferred stockholders of record at the close of business June 22, 1937.

• ORIGINAL HELICOID CONVEYOR •



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● Original Caldwell Helicoid is made only by Link-Belt. It is the continuous spiral conveyor, with flights rolled from a single strip of metal. No laps or rivets to interfere with the free, normal flow of materials. It is strong, durable, long-lived.

The Link-Belt line is complete. It includes—Helicoid and sectional flight type conveyors, standard drive units, troughs, fittings, hangers, linings, couplings, box ends, etc. Large stocks are carried at our plants and warehouses, as well as by prominent jobbers and supply houses throughout the country.

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See our Exhibit at the American Pulp and Paper Mill Superintendents Association Convention, Springfield, Mass., June 23, 24 and 25

Superintendents Announce Program for Springfield Convention June 23-25

The following program has been announced for the Eighteenth annual convention and exposition of the American Pulp and Paper Mill Superintendents' Association at Springfield, Mass., June 23-25, 1937:—

Wednesday Morning, June 23

9:00 A. M.—Registration and Inspection of Exhibits —Industrial Arts Building, Eastern States Exposition Grounds.

9:30 A. M.—Golf Tournament—Springfield Country Club (Luncheon)
Skeet Shooting—Westfield Rod & Gun Club
Mill Visits and Conducted Tours

Wednesday Evening

7:30 P. M.—New England Clam Bake—Industrial Arts Building
Address of Welcome
Mr. William H. Flood, President, Springfield Chamber of Commerce
Honorable Henry Martens, Mayor, Springfield, Massachusetts
Response
Mr. H. H. Harrison, Crystal Tissue Company, Middletown, Ohio
Presentation of Golf Prizes
Entertainment and Dancing

Thursday Morning, June 24

9:30 A. M.—Industrial Arts Building
Call to Order—General Meeting,
General Chairman—Mr. W. Gordon Booth, Robert Gair Company, New London, Conn.
Presiding
President—Mr. Frank J. Timmerman, Northern Paper Mills, Green Bay, Wisc.
Memorial
National Secretary—Mr. Robert L. Eminger, American Pulp & Paper Mill Superintendents Association.
Invocation
Rev. John H. Nolan, Rector, St. Peter's Episcopal Church, Springfield, Mass.
President's Message
Mr. Frank J. Timmerman

10:30 A. M.—Continuation of General Meeting
Presiding—Past President, Mr. John H. O'Connell
1. Subject—"Mill Problems." Question and Answer Period. Discussion in Open Forum.
2. Subject—"The Art of Felt Making"—Sound Motion Picture with Mr. Lowell Thomas as Narrator Presented by Albany Felt Company.

12:00 Noon—Recess

12:30 P. M.—Luncheon—Industrial Arts Building
Speaker—Mr. Edward E. Whiting—"Who Loves Business?" The Boston Herald, Boston, Mass.
Introduced by Mr. James B. Ramage, Franklin Paper Company, Holyoke, Mass.

Thursday Afternoon

2:00 P. M.—Group Meetings:
Book and Fine Writing Division—Mr. Charles Champion, Chairman, Millers Falls Paper Co., Millers Falls, Mass.
"Evolution of Sized Paper Drying"—Mr. F. W. Partsch, J. O. Ross Engineering Co.
"Description of Jones-Bertram Patent Beater"—Mr. George H. Spencer, E. D. Jones & Sons Co.
"Clean Paper"—Mr. F. K. Becker, Bird Machine Co.
Board Division—Mr. John H. Brougham, Chairman, Penn Fibreboard Corporation
"Making Board from Stock Pile to Finishing Room"—Mr. Allan Hyer, Black-Clawson Co.
"Steam for Board Mill"—Mr. Samuel Blum, H. M. Wilson Co.
"The Svenn Pederson Flotation Save-All"—Mr. F. Myers, Stockholm, Sweden
"Improvements Incorporated in the Latest and Largest Fourdrinier Liner Board Machine"—also Motion Picture on same—Mr. R. S. Johnston, Pusey & Jones Corporation
Sulphite Soda Pulp Division—Mr. John McCrystle, Chairman, Brown Corp., La Tuque, Quebec
"Factors in Chemical Losses in Alkaline Pulping"—Mr. G. A. Day, Chief Chemist at Brown Corp.
Round Table Discussion
Sulphite Division—Mr. Morris W. Hedden, Chairman, Racquette River Paper Company
"Designing a Plant for Bleaching Sulphite Pulp"—Mr. W. L. Savell, Mathieson Alkali Works
"Instrument Control in Pulp Cooking"—Mr. M. B. Hall, Foxboro Company
"Disc Refining in Connection with Pulp Processing and Reject Utilization"—Mr. A. S. Cosler, Bauer Bros. Co.
Tissue Division—Mr. H. H. Harrison, Chairman, Crystal Tissue Co., Middletown, Ohio
Discussion on Felts Formation and other problems led by Mr. Harrison
Ground Wood Division—Mr. Sidney D. Wells, Chairman
"Pulp Grinding Temperature Control—Mr. C. D. DeMers, Tayor Instrument Companies
"Riffling of Ground Wood Pulp"—Mr. R. I. Wynne Roberts, Norton Company

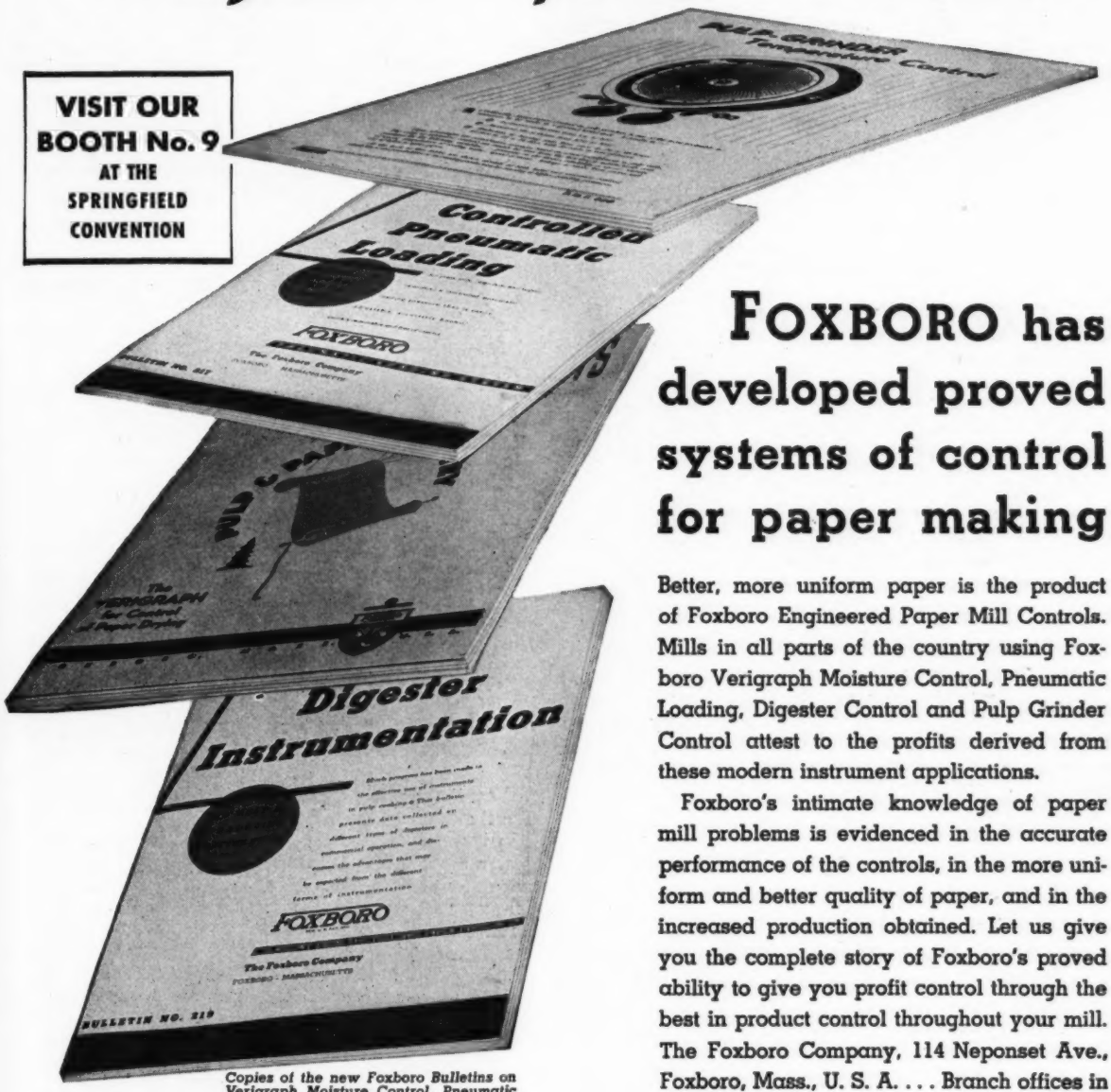
Thursday Evening

7:30 P. M.—Dinner and Entertainment—Industrial Arts Building
Master of Ceremonies—Mr. Charles Davidson, Jr., Whiting Paper Company, Holyoke, Mass.

PROFIT CONTROL...

...begins with product control!

VISIT OUR BOOTH No. 9 AT THE SPRINGFIELD CONVENTION



Copies of the new Foxboro Bulletins on Verigraph Moisture Control, Pneumatic Loading, Digester Control, and Pulp Grinder Control are yours for the asking.

FOXBORO has developed proved systems of control for paper making

Better, more uniform paper is the product of Foxboro Engineered Paper Mill Controls. Mills in all parts of the country using Foxboro Verigraph Moisture Control, Pneumatic Loading, Digester Control and Pulp Grinder Control attest to the profits derived from these modern instrument applications.

Foxboro's intimate knowledge of paper mill problems is evidenced in the accurate performance of the controls, in the more uniform and better quality of paper, and in the increased production obtained. Let us give you the complete story of Foxboro's proved ability to give you profit control throughout your mill. The Foxboro Company, 114 Neponset Ave., Foxboro, Mass., U. S. A. . . . Branch offices in 25 Principal Cities.

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PAPER MILL CONTROL

RESPONSE·ACCURACY

Friday Morning, June 25

9:00 A. M.—Industrial Arts Building
Call to Order—General Meeting.
President Mr. Frank J. Timmerman, Northern Paper Mills, Green Bay, Wisc.

1. Subject—"Cost Engineering"—Dr. J. P. Hagenauer, American Paper & Pulp Association
2. Subject—"Heat"—Motion Picture presented by Mr. J. W. Hemphill, Johns-Manville Sales Corp.
3. Subject—"Evaluating the Printing Qualities of Paper"—Mr. Morris Kantrowitz—Mr. R. H. Simmons, U. S. Government Printing Office, Washington, D. C.
4. Subject—"Modern Mechanical Drive for Paper Machines"—Mr. Robert L. Wickes, American Leather Belting Association

12:30 P. M.—Luncheon—Industrial Arts Building
Speaker—Mr. Harry Newton Clarke—"Men—Money—Management and Misunderstandings"
Introduced by Mr. Leon M. Yoerg, American Writing Paper Corp., Holyoke, Mass.

Friday Afternoon

2:00 P. M.—Continuation of General Meeting
Presiding—President, Mr. Frank J. Timmerman
Business
Election of Officers
Report of Auditing Committee
Report of Committe on Resolutions
Report of Nominating Committee

3:00 P. M.—1. Subject—"Progressive Forces in the Paper Industry"—Mr. George Rodney Wallace, Fitchburg Paper Company, Fitchburg, Mass.

2. Subject—"Color"—Motion Picture, Presented by Heller & Merz Company
3. Subject—"The Proper Use of Gear Motors and Speed Reducers by the Paper Industry"—Mr. Marthens, Westinghouse Electric & Manufacturing Co.

5:00 P. M.—Adjournment

Friday Evening

7:30 P. M.—Annual Banquet—Municipal Auditorium, Springfield, Mass.
Toastmaster—Judge William J. Granfield, Springfield, Mass.
Speakers—
His Excellency, Charles F. Hurley, Governor of the Commonwealth of Massachusetts
Honorable William P. Yoerg, Mayor of Holyoke, Mass.
Mr. D. Clark Everest, President, American Pulp & Paper Association
Presentation of L. D. Post Trophy
Presentation of Prizes
Entertainment and Dancing

Richard H. Laftman Goes to Jacksonville

The National Container Corporation, Long Island City, N. Y., announces that Richard H. Laftman is now associated with this company as general manager of the kraft, pulp and board division in Jacksonville, Fla.

BOSTON OUTING IS BIG SUCCESS

(Continued from page 18)

1.65 @ 1.75. All figures are f.o.b., Boston. Twine prices were firm.

Installing Wet-End Drive

Bird & Son, Inc., East Walpole, Mass., are installing a new Westinghouse wet-end drive on their No. 2 cylinder machine, which has been completely revamped by the Beloit Iron Works. The change will permit the company to speed up their machine approximately 25 per cent. Operation is expected to be resumed soon.

FINE PAPER DIVISION of the New England Paper Merchants Association held a constructive meeting Tuesday at the Boston Chamber of Commerce.

COST FINDING COMMITTEE of the wrapping paper merchants of Greater Boston is to hold a meeting at the Boston Chamber of Commerce June 25.

PHILIP ANDERSON, formerly with Stimpson & Company, Inc., for a number of years, is now associated with Smith, Dee & Lane, 610 Atlantic Avenue, direct mill representatives for nationally known manufacturers of paper specialties.

KENNETH MOSES, New England representative of the St. Regis Paper Company, left Sunday for two weeks training with the Reserve Corps of United States Marines at the Portsmouth Navy Yard, Portsmouth, N. H.

C. A. VAN DEUSEN, Eastern representative of The Gummed Products Company, New York; Robert Stone, of the Crown Willamette Paper Company, and Ralph Beach, of the Riegel Paper Company, were in Boston last week, calling on the trade and attending the outing of the Boston Paper Trade Association on Monday.

French Paper Production Normal

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 9, 1937—Indications are that during the first quarter of 1937 production of paper by the 200 mills in France was at the normal rate of 1,000,000 tons a year. The demand for paper was brisk owing to dealers' desire to accumulate stocks prior to the anticipated rise in prices. Production is expected to continue at normal or better during the second quarter of the year. Application of the 40-hour week will increase costs but should not interfere materially with production inasmuch as sufficient orders are on hand to keep the mills busy for the next three months. Actual and threatening monetary inflation and increased costs due to the application of new labor legislation have steadily forced prices up, although the rise in paper prices have not been as rapid as those applying to wood pulp.

Trade-control groups for the paper industry organized during 1936 have now succeeded practically in eliminating the disagreeable features of competition. Orders are distributed upon an equitable basis and mills appear satisfied with the functioning of the new associations. The newsprint producers organization has secured as an exceptional measure an increase in import quotas in order to permit the renewal of depleted stocks.

Felts run longer on TENSILASTIC Rubber Rolls

TENSILASTICS hold their crown longer.

TENSILASTICS have uniform density throughout the roll.

TENSILASTICS do not harden nor lose tensile with age.

TENSILASTICS are lively. They have correct Modulus!

AMERICAN WRINGER CO., Inc.

Rubber Roll Specialists for nearly 50 Years

WOONSOCKET, R. I. — The Williams-Gray Co. — FARNHAM, QUEBEC

Merchandise Mart, Chicago — 221 No. LaSalle St., Chicago, Ill. — 267 Fifth Ave., New York

Coast Pacific Representative: Walter S. Hodges, Pacific Bldg., Portland, Ore.

Later Mill Practice In Dewatering and Drying of Pulps

By R. D. Kehoe[1]

It is a natural reaction from increasing world shortage of pulp that increasing interest is shown to a marked degree in means of dewatering and drying of both bleached and unbleached pulps for shipment from new sources of supply. In the United States this thought is not confined to only the South and West Coast. Some converting mills have an excess production of pulp from their own mills, which, if dewatered and perhaps dried, can be shipped to distant points at a profit and a badly needed supply of pulp be made available during present emergency.

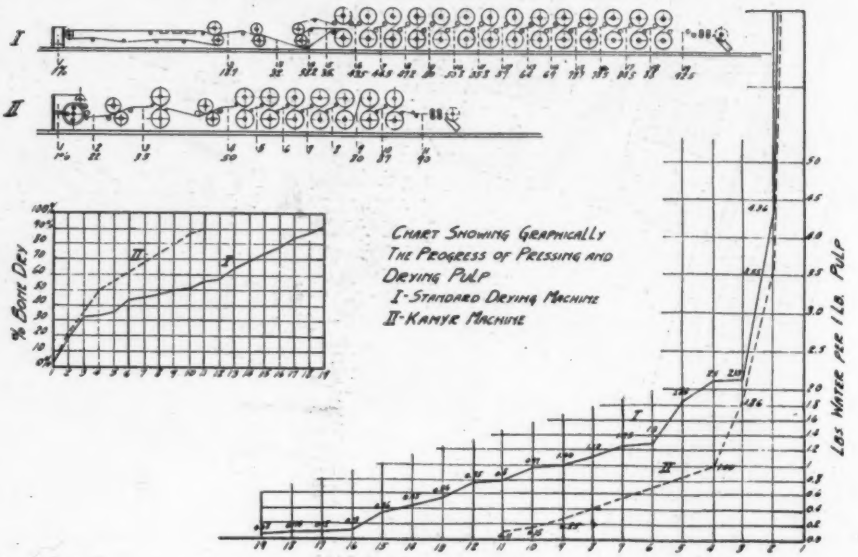

FIG. 2.

I will deal briefly with the later and more modern means for Dewatering and Drying for shipment. The old standard type of wet machine is still effectively used but for shipment to any wide freight area from a point of production it seems obvious that pulp must be dried to a greater degree. The average old style single press wet machine would average in results:—

(a) Sulphite or Kraft.... 30 per cent Pulp and 70 per cent water
(b) Groundwood ..... 25 per cent Pulp and 75 per cent water

[1] Pres., Paper and Industrial Appliances, Inc.

The two press wet machine would improve on results of single press to:—

(a) Sulphite or Kraft.... 40 per cent Pulp and 60 per cent water
(b) Groundwood ..... 30 per cent Pulp and 70 per cent water

The great difficulty encountered in increasing the number of presses and pressure to further dewater pulps, is the rapidly increasing cost of felts per ton of pulp pressed. In general mill experience the felt cost per ton on a single press wet machine is said to average 9 cents per ton and for double press wet machine 15 cents per ton. It seems natural therefore that the trend of the pulp producing countries has been toward a feltless type of press, particularly for shipment to what is termed "wet pulp" ranging up to 55 to 58 per cent air dry. The Kamyr Feltless Wet press (see Fig. 1) I feel needs no introduction as it is almost universally used for so-called wet pulps both here and abroad.

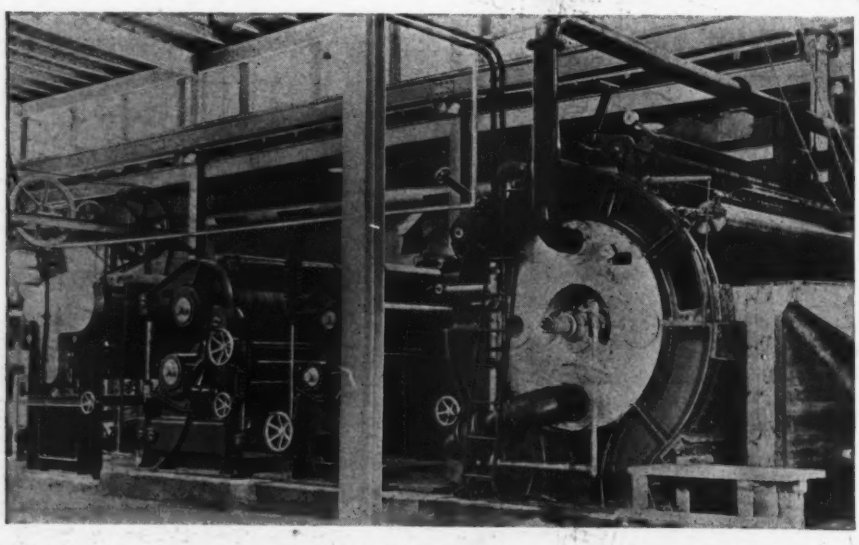

FIG. 1.

In connection with the Kamyr feltless wet press, there is, however, one important point to

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DIFFERENCE IN WATER CONTENTS OF PULP OF DIFFERENT TESTS BY POUNDS AND PERCENTAGES

Per cent Air Dry	Gross Weight of One Ton of Pulp	Pounds Water to be Removed to get 1 Ton Air Dry Pulp	36 Per cent		37 Per cent		38 Per cent		39 Per cent		40 Per cent		41 Per cent		42 Per cent		43 Per cent		44 Per cent		45 Per cent		46 Per cent		47 Per cent		48 Per cent	
			Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%	Lbs.	%
36	5555	3555	149	4.18	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
37	5406	3406	293	8.25	144	4.22	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
38	5262	3262	427	12.0	278	8.15	134	4.12	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
39	5128	3128	555	15.6	406	11.9	262	8.05	128	4.09	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
40	5000	3000	677	19.0	528	15.5	384	11.8	250	8.00	122	4.09	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
41	4878	2878	794	22.3	645	18.9	501	15.4	367	11.6	239	7.96	117	4.07	....	....	....	....	....	....	....	....	....	....	....	....	....	....
42	4761	2761	905	25.5	756	22.2	612	18.7	478	15.3	350	11.7	228	7.94	111	4.02	....	....	....	....	....	....	....	....	....	....	....	....
43	4650	2650	1011	28.3	862	25.4	718	22.0	584	18.6	456	15.2	334	11.6	217	7.85	106	4.00	....	....	....	....	....	....	....	....	....	....
44	4544	2544	1111	31.4	962	28.2	818	25.0	684	21.8	556	18.6	434	15.2	317	11.5	206	7.77	100	3.92	....	....	....	....	....	....	....	....
45	4444	2444	1207	34.0	1058	31.0	914	28.0	780	25.0	652	21.7	530	18.5	413	15.0	302	11.4	196	7.71	96	3.92	....	....	....	....	....	....
46	4348	2348	1299	36.6	1150	33.7	1006	30.8	872	27.9	744	24.8	622	21.7	505	18.3	394	15.0	288	11.3	188	76.9	92	3.91	....	....	....	....
47	4256	2256	1387	39.0	1238	36.3	1094	33.6	960	30.7	832	27.7	710	24.8	593	21.6	482	18.3	376	15.0	276	11.2	180	7.66	88	3.90	....	....
48	4168	2168	1473	41.6	1324	38.8	1180	36.2	1046	33.4	918	30.6	796	27.6	683	24.7	572	21.6	466	18.3	366	15.0	266	11.2	174	7.66	86	3.90
49	4082	2082	1555	43.9	1406	41.2	1264	38.9	1130	36.2	1000	33.3	878	30.7	761	27.5	650	25.4	544	21.3	444	18.3	348	15.0	256	11.2	168	7.74
50	4000	2000	1633	46.1	1483	43.5	1339	41.0	1206	38.6	1078	35.9	956	33.3	839	30.3	728	27.5	622	24.4	522	21.2	426	18.3	334	15.0	246	11.3
51	3922	1922	1709	48.1	1560	45.8	1416	43.5	1282	41.0	1154	38.4	1032	35.8	915	33.0	804	30.3	698	27.4	598	24.4	502	21.2	410	18.3	322	14.8
52	3846	1846	1781	50.5	1632	48.0	1488	45.1	1354	43.4	1226	40.9	1104	38.4	987	35.7	876	33.0	770	30.3	670	27.3	574	24.3	482	21.2	394	18.2
53	3774	1774	1851	52.2	1702	50.0	1558	47.6	1424	45.5	1296	43.2	1174	40.8	1057	38.3	946	35.7	840	33.0	740	30.3	644	27.3	552	24.3	464	21.3
54	3704	1704	1919	54.0	1770	52.0	1626	50.0	1492	47.8	1364	45.5	1242	43.3	1125	40.7	1014	38.3	908	35.7	808	33.0	712	30.3	620	27.3	532	24.4
55	3636	1636																										

Example: By raising the test from 38 per cent to 50 per cent 1264 pounds water or 38.90 per cent is driven off.

FIG. 4.

keep in mind; this is, that when with this press practically one-half the water content is expelled by mechanical pressure, an extremely "dense" and highly compressed sheet is the result. This highly compressed sheet is no disadvantage if shipped and used in wet state, i.e., 55 to 58 per cent air dry. It presents no disadvantages if later dried in modern types of air circulation driers. But, in the event of drying after leaving the Kamyr feltless wet press—say up to 95 to 100 per cent air dry, with ordinary cylinder drying machines, there has been considerable objection to use by paper mills due to difficulty of reabsorption of water in repulping for use in the paper mills. The modern air drier overcomes this objection, as the highly compressed sheet is not directly "baked" on a hot cylinder and the surface is open and porous permitting rapid reabsorption of water in the beater or pulper.

Fig. No. 2 illustrates the difference in drying unit required for different types of wet pressing machines. From this it is apparent that both initial investment and drying cost is reduced by use of the Kamyr Feltless Wet Press. In some Scandinavian mills, to overcome the earlier objections of the buyers of pulps, the grooved press rolls have been machined to a smooth surface, this in turn prevented the drying by mechanical pressure beyond approximately from 48 to 50 per cent air dry. In the meantime, due to development of the highly economical Flakt Drier, it was thought the increased steam economy somewhat compensated for less efficient wet end. The Flakt Drier, shown in Fig. 3, is guaranteed to use not more than 1.3 lbs. of steam per lb. of water evaporated and in actual practice requires less. On this basis, assuming that 40 per cent of the water has to be evaporated in the drier, the steam consumption would not be more than 1000 lbs. per ton of pulp dried. Particular mention is made of this drier for the reason that its development and use in most modern pulp mills is directly related to overcoming the previous objections to dried pulp after being highly compressed by mechanical means.

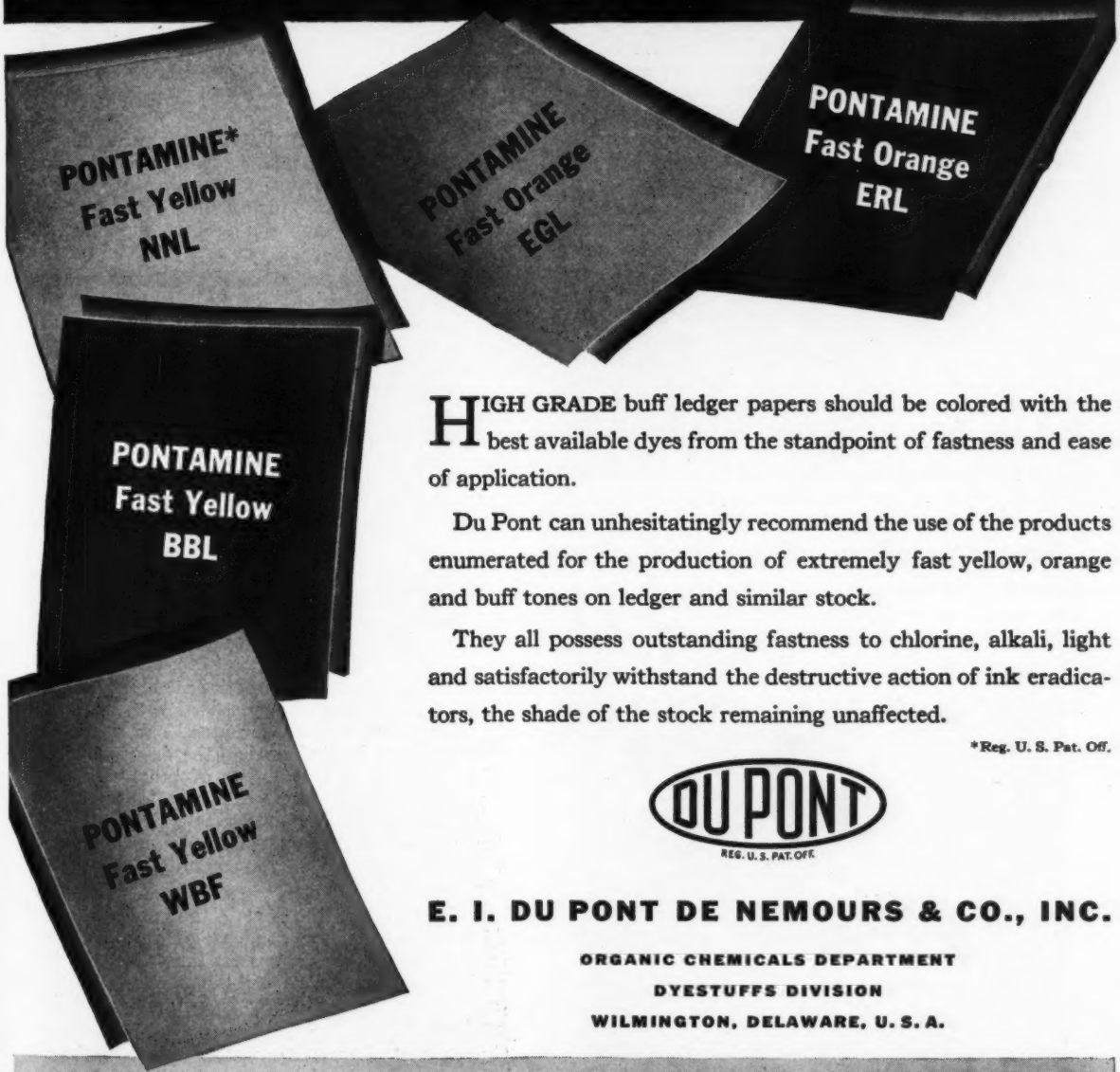
While if dried pulp is the objective due to freight costs in shipment, I will deal first with saving in cost, etc. using Kamyr feltless wet press for shipment of pulps dewatered in wet machine.

To clearly illustrate difference note Fig. No .4 prepared by Mr. Jenssen, dealing with difference in

FIG. 3.

WHERE FASTNESS IS ESSENTIAL

Select these Du Pont Dyes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water content of pulp of different tests by pounds and percentages.

Now as to harmless air drying of pulps after dewatering or pressing, the Flakt Drier has been almost universally adopted by pulp producing countries on all grades including rayon. Figure 5 is a mill installation in the United States.

In this type of drier the pulp web is conveyed horizontally backward and forward until it leaves the drying chamber, and taking the pressed pulp web from the wet end. The drier consists of:—

THE DRYING CHAMBER: Built on a solid frame of structural steel. The longitudinal sides and the roof are inside covered with sheet iron. The inlet and outlet sides are provided with revolving windows with frames of teak. The drying chamber contains the heating elements required for the drying as well as the conveyers and other apparatus for carrying the pulp. The fans that recirculate the drying air in the machine are located at the middle of the machine close to the drying chamber.

The drying chamber consists of a number of vertical sections, all alike. If desired, the machine can thus be enlarged for a greater capacity than what was originally intended, if only space enough for this is arranged from the beginning. The longitudinal sides of the frame are divided into a certain number of areas, each provided with a tightening sheet fastened on the frame and serving as an inspection door. The machine is erected on two channels stretching along the dryer, supported by foundation pillars or erected immediately on the floor. These beams are fastened to the floor at the middle of the drying machine but otherwise located on rollers so that the machine is enabled to expand freely at both sides. The drying chamber is further divided into horizontal canals, separated from each other by short iron partitions. If the ceiling is high enough the height of the machine can be increased, if required. The horizontal canals are only communicating at both ends of the drying machine. Each canal contains conveyers for carrying the pulp from one end of the machine to the other.

PULP WET CONVEYERS: These conveyers consist of two endless parallel chains of forge steel, specially designed for this purpose, and connected with blank, transversal steel rods intended to support the pulp web. The chains which are equipped with rollers run on guides along the main sides of the dryer.

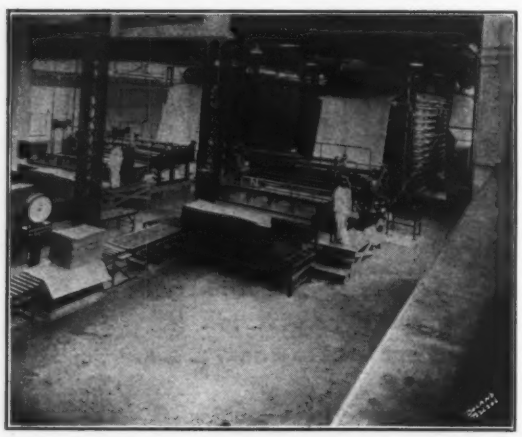

FIG. 5.

The conveyers turn on the chain wheels of the conveyer shafts erected above each other at the end sections of the machine. For each conveyer there are thus four chain wheels located at the inlet and outlet ends of the machine. As a rule the conveyers are driven by the shafts at the intake end of the machine. The conical drive provided with a gear placed on the floor close to the machine is arranged for this purpose. The power for the conical drive is supplied by the main shaft of the machine and transmitted to the conveyer shafts by means of a very strong roll chain. By cylindrical gears the different conveyer shafts are moved in the right direction. The shafts at the outlet end of the dryer are adjustable in the longitudinal direction of the machine, and the chain wheels are here movable relative to each other. At section drive the conveyers may, of course, be driven by a direct-connected motor with adjustable speed.

Each horizontal canal contains two conveyers; the upper forming the returning part of the conveyer in the canal above. The pulp is carried on the conveyer part running at the bottom of the canal and is prevented from contact with the heating bodies by the upper conveyer part.

Besides the conveyer shafts mentioned the so-called turning rolls are also located at the end sections of the machine. The purpose of these rolls is to guide the pulp web at the turning points and to transport the web from each conveyer to the one next above.

The turning rolls are all equipped with engaging and disengaging friction clutches so that they are connected to and driven by the conveyer shafts when the pulp web is entered. At normal operation the rolls can be disconnected. By this arrangement all stresses in the pulp web resulting from its shrinking during the drying process will be automatically eliminated during the conveyance through the machine. The turning rolls are made of strong steel tubes with an outer diameter of about 300 mm. The journals of these rolls as well as the conveyer shafts run in ball bearings of a solid construction.

STEAM HEATING ELEMENTS: The drying air is heated by means of the steam heaters in the drying chamber. These heaters are located in the horizontal canals and arranged so as to distribute the heat uniformly over the whole width of the machine. They are made of gilled seamless steel tubes which before the erection in the drier are thoroughly controlled and tested. Each heater is provided with inlets and outlets for steam and condensate. The connection pieces which are located outside the drying chamber itself join the inlets and outlets of heaters lying on the same level so that the steam passes heater after heater from the end of the machine towards the center, where all the outlets are brought together into two vertical condensate conduits. The whole heating system is welded.

In order to utilize the heat in the condensate and avoid steam losses, the condensate is forced from the traps through the fin heaters located at the bottom of the machine. These will thus be heated mainly by condensate which thereby is generally cooled to about 194° F.

CIRCULATING FANS: As mentioned before, the circulation fans for the drier are located at the middle of the machine. These fans are usually of a high pressure propeller type. They are operated at a

speed of 1500 to 2000 R.P.M. The fans are erected above each other, each fan on a horizontal shaft running in ball bearings and each provided with a driving motor. All the bearings located within the fan chambers, where a comparatively high temperature is prevailing, are equipped with an air cooling device specially designed for this purpose. The circulation fans function in the following way: The air is exhausted from every other one of the horizontal canals and distributed into the next one. Then the air passes to the ends of the machines and returns to the fans through the nearest canal. The purpose of the circulation fans is to maintain a high and constant air velocity in all parts of the machine so as to secure an even and effective evaporation from the pulp web.

HEAT EXCHANGER: Besides this constant air circulation there is a comparatively slow current of air from the bottom of the drying machine, where dry hot air is supplied, to the top of the dryer where the corresponding quantity of air is discharged. The exhausted air has a considerable moisture content and a temperature of about 212° F. at normal steam pressure. The moist air is forced through a heat recovery unit made of aluminum where heat is exchanged between the leaving moist air and the dry air entering the Flakt Drier. The quantity of ventilating air—fresh air as well as moist air can be accurately controlled by the regulating devices in the air ducts.

SOFTENING APPARATUS: Immediately in front of the drying machine there is a so-called folding or softening apparatus, consisting of two grooved cast iron rolls driven by a special conical drive. By this the peripheric velocity of the rolls mentioned can be adjusted to suit the speed of the conveyers. The purpose of this folding apparatus is mainly to counteract the unfavorable influence of the shrinking of the pulp web. As the pulp web is folded there can be room for a rather large pulp area within a certain drying volume given. It must, however, be remembered that the machines may also be operated without such a folding device, if this should be convenient.

At both ends of the machine there are bridges to be used by the machine tenders when conveying the pulp web through the machine. These bridges can be raised and lowered by means of hand wheels.

The Flakt Drier is equipped with an electric disconnecting device which is brought into function automatically, if for some reason the pulp web should burst within the drying chamber. As a rule, there is also a device for manual operation, in case of emergency.

The whole drying chamber is insulated by special insulating boards with a very high insulation power. The insulating boards are divided into a number of areas on the longitudinal sides so that it is possible quickly to inspect the machine at any point required.

At the starting up of the drier the pulp web is entered into the folding apparatus in front of the drying machine, from where it is conveyed direct into the drying chamber. After the web has been carried to the bottom conveyer of the machine it is transported by this to the opposite end of the machine (the outlet end) where the web is turned by hand over the turning roll driven by means of the coupling. The revolving window before this turning roll must therefore be open. From the turning roll the web is carried automatically to the next conveyer moving towards the intake end, where the web is again turned, etc. When taking the pulp web through the drier, the machine tenders use the platforms situated at the ends of the machine. As a rule, Flakt Driers of type "H" are supplied with thirteen conveyers in height, which can generally be allowed at a normal height of the roof in the paper room, i.e., approximately 20 feet. In this case the pulp web has to pass back and forth through the drying chamber thirteen times. If the roof is sufficiently high the machine can, however, be made still higher, i.e., with fifteen or seventeen stories. When starting up the machine it is possible to obtain a slight vacuum in the drying chamber by means of the fan system. When entering the pulp web into the dryer the machine tenders thus are never troubled by the relatively high temperature in the machine, since fresh air is supplied as soon as any of the windows are opened. The object of the windows at the gable ends is also to permit inspection of the machine during the operation.

As a rule, the pulp leaves the drier at the top of the drying chamber and is finally carried to the cutter, where it is cut into sheets in the usual way and packed.

As mentioned before, the drying process in the SF drier is effected by hot air exclusively. When passing the drier both sides of the pulp web are exposed to a strong current of hot air from the circulating fan system. The heaters are located so as to cause a turbulent air motion which efficiently influences the drying process. The system of heat exchange between the air and the pulp web has been thoroughly elaborated to suit the conditions, in accordance with the results of exhaustive studies, and experiments. The circulation fans have a constant air capacity and distribute the air uniformly within the machine. It is of great importance that the quantities of ventilating air in the Flakt Drier are carefully selected in respect to the water evaporation. When some of the heat in the moist air leaving the drier has been used for pre-heating the supplied ventilating air the remaining heat can be utilized still further in heat recovery units for producing ventilating air for the mill. Some of these machines have also been equipped with apparatus for preparing hot water by utilizing the heat in the moist air from the drier. Thus great quantities of water with a temperature of 131 deg. F. to 140 deg. F. may be obtained, which water can be used, for instance, as spray water on the wet section.

Columbia Alkali Opens Minneapolis Office

W. I. Galliher, director of sales of the Columbia Alkali Corporation, announces the appointment of J. R. Bush as district sales manager for Minnesota and adjacent territory, with offices at 616 South Third street, Minneapolis, Minn.

Mr. Bush was born in Detroit Lakes, Minnesota and attended the University of Minnesota and the Minneapolis Business College. He was associated with the Minnesota Highway Department for a number of years and since that time has been with the Columbia organization. He has many friends in the Northwest who all wish him success with his new responsibilities. He will supervise the distribution of Columbia's full line of products.

Government Paper Bids and Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 16, 1937—The Government Printing Office has received the following bids for 20,000 sheets of 22 x 28 buff railroadboard; Virginia Paper Company, $30.55 per M sheets; Barton, Duer & Koch Paper Company, $29.02; Old Dominion Paper Company, $30.467; Dobler & Mudge, $30.35; Stanford Paper Company, $29.65; Reese & Reese, Inc., $30.55; Whitaker Paper Company, $30.55; and Walker, Goulard, Plehn Company, $30.45.

For 6,0000 sheets of blue railroad board; Virginia Paper Company, $30.55 per M sheets; Barton, Duer & Koch Paper Company, $29.90; Old Dominion Paper Company, $30.467; Dobler & Mudge, $30.35; Stanford Paper Company, $29.65; Reese & Reese, Inc., $30.55; Whitaker Paper Company, $30.55; Walker, Goulard, Plehn Company, $30.45.

For 24,150 pounds (700,000 sheets) of 21 x 32 and 22 x 34 yellow sulphite manifold paper; Cauthorne Paper Company, 8.92 cents per pound; Mathers-Lamm Paper Company, 10 cents; Old Dominion Paper Company, 11.547 cents; Dobler & Mudge, 9 cents; Barton, Duer & Koch Paper Company, 8.89 cents; Whitaker Paper Company, 9 cents; Graham Paper Company, 9.2 cents; and Import Paper Company, 9 cents less 2 per cent.

For 57,500 pounds (500,000 sheets) of white offset book paper, grain 38 inch way; Stanford Paper Company, 6.54 cents; R. P. Andrews Paper Company, 6.54 cents; Dobler & Mudge, 6.54 cents; Mathers-Lamm Paper Company, 6.54 cents; Paper Corporation of U. S., 6.54 cents; Barton, Duer & Koch Paper Company, 6.48 cents; Cauthorne Paper Company, 6.394 cents; Reese & Reese, Inc., 6.54 cents; Whitaker Paper Company, 6.4 cents; and Old Dominion Paper Company, 6.499 cents.

For 26,250 pounds (250,000 sheets) of white offset book paper, grain 32 inch way; Stanford Paper Company, 6.54 cents; R. P. Andrews Paper Company, 6.54 cents; Dobler & Mudge, 6.54 cents; Mathers-Lamm Paper Company, 6.64 cents; Paper Corporation of U. S., 6.54 cents; Barton, Duer & Koch Paper Company, 6.48 cents; Cauthorne Paper Company, 6.394 cents; Reese & Reese, Inc., 6.54 cents; Whitaker Paper Company, 6.4 cents; and Old Dominion Paper Company, 6.499 cents.

Barton, Duer & Koch has been awarded the contract for furnishing 1,056 pounds (6,600 sheets) of 25 x 38 ivory laid antique book paper at 16.25 cents per pound, bids for which were received on May 24.

The following bids were received for 93,800 pounds of M. F. book paper; John F. Post, Inc., 6.51 cents; Whitaker Paper Company, 6.51 cents; R. P. Andrews Paper Company, 6.51 cents; Barton, Duer & Koch Paper Company, 6.51 cents; and Fitchburg Paper Company, 6.76 cents.

For 90,000 pounds of chip board; Cauthorne Paper Company, Inc., 2.24 cents; Container Corporation of America, 2.125 cents less 1 per cent; Whitaker Paper Company, 2.1478 cents; Old Dominion Paper Company, 2.139 cents; R. P. Andrews Paper Company, 2.134 cents; L. Hyman & Sons, 2.075 cents; Virginia Paper Company, 2.1 cents; Mathers-Lamm Paper Company, 2.158 cents; Stanford Paper Company, Inc., 2.15 cents; Barton, Duer & Koch Paper Company, 2.1 cents; Reese & Reese, Inc., 2.16 cents; and J. R. Howarth Paper Company, 2.196 cents.

For 50,000 pounds of antique book paper; John F. Post, Inc., 6.16 cents; R. P. Andrews Paper Company, 6.16 cents; Stanford Paper Company, 6.17 cents; Barton, Duer & Koch Paper Company, 6.16 cents; Reese & Reese,, Inc., 6.17 cents; Cauthorne Paper Company, Inc., 6.14 cents; and Whitaker Paper Company, 6.16 cents.

For 3,875 pounds of white bond paper; Old Dominion Paper Company, 23.99 cents; Graham Paper Company, 23.8 cents; R. P. Andrews Paper Company, 23.79 cents; Barton, Duer & Koch Paper Company, 23.5 cents; Walker, Goulard, Plehn Company, 37.5 cents; Whitaker Paper Company, 28 cents; Mathers-Lamm Paper Company, 24.24 cents; and J. R. Howarth Paper Company, 28 cents.

Brotherhood Activities in New York

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., June 14, 1937—A conference this week between officials of the Carthage Papermakers Inc. and representatives of the International Brotherhood of Papermakers resulted in a satisfactory agreement under which employees will receive substantial wage increases. The meeting was held to consider requests made by the recently formed union locals at the mill and the agreement was signed by Urban C. Hirschey, president of the company, and officials of the International Brotherhood of Papermakers and the International Brotherhood of Pulp, Sulphite & Paper Mill Workers.

Announcement is also made by the International organization of the forming of a union local at the Island Paper Company in this village. The charter has already been received and a meeting for election of officers is scheduled for this week after which negotiations will be started for the adjustment of wages and hours. The union at this plant was formed at the request of the employees themselves, no effort having been made by union organizers for fear that the mill might be closed by the owners. Plans are under way for a Labor Day celebration here this fall to be conducted by the various union locals of this village and West Carthage.

At the National Paper Products Company two unions have been formed with virtually all employees enrolled. Relations between the mill management and the International organization are completely harmonious. Both locals have received their charter and installed officers. Thomas J. Coughlin has been elected president of the Papermakers' Union. Others elected include Clarence Greenwood, vice president; Emory Santamour, corresponding secretary; Herbert Richter, financial secretary, and Fay Kelsey, treasurer. Donald Willes was elected president of the Pulp, Sulphite & Paper Mill Workers' Local and John Bauer, vice president.

Ruth Lansing Awarded $1,600

A jury's award of $1,600 to Ruth Lansing, of Neenah, against the John Strange Paper Company, Menasha, was upheld last week in circuit court at Oshkosh, Wis. Miss Lansing alleged injuries in an automobile accident in front of the paper company. Judge Fred E. Beglinger agreed that the verdict was based wholly on conjecture but held there was sufficient evidence to carry the question of negligence to the jury. The jury found ice on the roadway in front of the company was formed through negligence.

Obituary

Frank H. Willard

[FROM OUR REGULAR CORRESPONDENT]

WORCESTER, Mass., June 14, 1937—On January 26, 1883, when he was 17 years old, Frank H. Willard started as errand boy with the Graton & Knight Company, then located at Front and Trumbull streets. There were 38 men in the organization then. From errand boy he became a leather cutter and at the end of his first 10 years rose to a foreman's position. In 1898 Mr. Willard became superintendent of the belt shop and in 1901 general superintendent.

Twelve years later, in 1913, Mr. Willard became assistant general manager of the company and in 1917, on the eve of the entrance of the United States in the World War, he was made vice-president and general manager. This was the greatest period in the company's business life, with extraordinary plant expansion and the employment of more than 3,300 workers. When the company was reorganized in a post war slump, in 1926, Mr. Willard was elected president of the company. He celebrated his fiftieth anniversary in the company's employ in 1933.

His first outside recognition came in 1922 when Governor Channing H. Cox selected Mr. Willard to represent the Massachusetts State Chamber of Commerce on the advisory committee to consider the consolidation of the New England railroads. Then in 1928 when the American Leather Belting Association was formed, Mr. Willard was chosen for its first president. He was also president of the Power Transmission Association and the Manufacturers' Research Association.

It was in 1930 that Mr. Willard first became a vice-president of the National Association of Manufacturers, one of the most powerful trade organizations in the nation. The following year he became a member of its executive committee. In 1931 he was also elected president of the Associated Industries of Massachusetts, another powerful industrial group. He was chairman of the sole and belting leather division of the Tanners' Council of America.

Philip J. Mead

[FROM OUR REGULAR CORRESPONDENT]

BUFFALO, N. Y., June 14, 1937—Philip J. Mead, vice-president and sales manager of D. J. Mead & Son, Inc., wholesale paper concern of Buffalo, died recently.

Mr. Mead was well known in Buffalo and in Kenmore. A native of Rochester, he has lived in Buffalo since he was four years old.

Active for several years in baseball, Mr. Mead is remembered by many as organizer and manager of the Oxford Baseball Team, first to sign up in the Twilight Municipal League. In recent years he has been active in affairs of the Knights of Columbus, the Buffalo Trap and Field Club and the Holy Name Society of St. Paul's Church. His home has been in Kenmore since 1927.

Surviving are his wife, Mrs. Bertha (Bohn) Mead; a son, Daniel Mead; three brothers, Arnold Mead of Eggertsville, Daniel Mead of Cheektowaga and Robert Mead of Buffalo; two sisters, Josephine and Cornelia of Buffalo, and his parents, Mr. and Mrs. Philip J. Mead, Sr., of Buffalo. Burial will be in Mt. Calvary Cemetery, Cheektowaga.

Holyoke Reaches Working Agreement

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., June 14, 1937—Final agreement was reached between the paper mills of the American Writing Paper Corporation and other local mills last week and the representatives of most of the paper mills in the city. About 4,000 workers are effected.

The agreement is unique in that the avoidance of a strike on account of the insistence of the union men for a closed shop was obtained by compromise believed to be unique in local union history. A union shop agreement usually provides that an employee must join the union within a certain period after beginning work or lose his employment. The substitute agreement provides that any permanent employee who is a member of the brotherhood or becomes a member or is reinstated "shall as the condition of continued employment maintain his membership in the union during the life of this agreement."

The agreement also carries with it an increase of eight cents per hour for men with the exception of watchmen at fifty-one cents an hour; minimum rate for women six cents per hour increase or forty-four cents per hour; piece work rate increase ten per cent; minimum rate for tour workers in the heating room fifty-seven cents an hour; on the paper machines fifty-nine cents an hour. The agreement will remain in effect up to and including May 31, 1938. It is retroactive to May 3. The paper concerns that have signed include the American Writing Paper Corporation, Franklin Paper Company, Parsons Paper Company, Newton Paper Company, Taylor Logan Company, Crocker McElwain Company, Chemical Paper Manufacturing Company and Valley Paper Company, all of Holyoke, the Carew Manufacturing Company of South Hadley Falls and the Strathmore Paper Company of Woronoco. A few other mills who did not sign will, it is understood, accept the agreement in effect.

R. A. Richards Protests

Raymond A. Richards, a vice president of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, an American Federation of Labor affiliate, has announced that he has protested to the state labor relations board the application for listing and recognition of an independent paper mill union formed by employees of the Nekoosa-Edwards Paper Company. The Nekoosa-Edwards independents organized in May as a non-affiliated labor union, and has applied for recognition as a minority group, claiming a membership of about 200 out of 1,050 employees of the company.

Japan Imports More Pulp

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 16, 1937—Imports of wood pulp into Japan during March were 39 percent higher than during February and 11 percent higher than during the same period last year, according to a recent report from Commercial Attache Frank S. Williams at Tokyo, Japan. Imports from the United States during the first quarter of the year have represented 28 percent of the total as compared with 39 percent of the total during the first quarter of 1936.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, of Pulp and Paper Mills

Visits Site for Mill at Prince Rupert

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., June 14, 1937—The site of the proposed pulp and paper mill at Prince Rupert, B. C., which will be erected by Frank Buckley, Vancouver business man, was recently inspected by Mr. Buckley, H. H. Hanson of Philadelphia, and L. Lane of Ottawa, in company with F. M. Good, city engineer of Prince Rupert.

For some years past Mr. Buckley has been supporting a proposal to erect a pulp and paper mill at the northern B. C. port, and on each of his visits to the site has announced the project as one step nearer early commencement.

To Build First Mill in Mysore State

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 16, 1937—The foundation stone of the Mysore Paper Mills, the first paper factory in Mysore State, was laid at Badravati on April 1, according to a report from Vice Consul Aubrey E. Lippincott, at Madras, India. The new concern, a joint stock company, is an outgrowth of investigations conducted by the Government of Mysore into the bamboo pulp resources of the State. These investigations were conducted as part of a general State economic development program. The new plant is designed to manufacture 4,500 tons of paper per year.

Installs New Steam Plant

[FROM OUR REGULAR CORRESPONDENT]

NEW WESTMINSTER, B. C., June 14, 1937—A new 350 horsepower double unit steam plant is now being installed at the plant of the Westminster Paper Company Limited at New Westminster, B. C., by the Dominion Construction Company Limited, Vancouver. The new plant will have more than twice the capacity of the unit now in use, and will permit of continuous operation, thus avoiding the necessity of shutdowns for inspection. It will be used for heating, drying and processing the company's products.

Construction News

Birmingham, Ala.—The Birmingham Paper Company, Fifth avenue South and 21st street, manufacturer of commercial paper products, has plans under way for new addition to paper converting plant, to be three-story and basement, located on adjoining site on Fifth avenue, extending to Twenty-second street. Entire structure will be used for production, including departments for manufacture of corrugated boxes and containers, envelopes, school tablets and kindred specialties. It will cost about $175,000, including equipment. Bids are scheduled to be asked on general contract at early date. Charles H. McCauley, Jackson Building, Birmingham, is architect.

Kimberly, Wis.—The Kimberly-Clark Corporation, Neenah, Wis., has work under way on expansion and improvements in mill at Kimberly, used for manufacture of book, writing and other paper stocks, previously referred to in these columns. Project includes a new addition to main mill, for stock-screen and regulator building, as well as alterations and improvements in structure. General contract is being carried out by the Ben B. Ganther Company, 78 State street, Oshkosh, Wis., and a number of subcontracts have been let to the Duck Creek Brick Company, Duck Creek, Wis., Gagnon Clay Products Company, Green Bay, Wis., and W. H. Pipkorn Company, Milwaukee, Wis., for brick, glazed tile and glass work, respectively. No estimate of cost has been announced. C. W. Nelson is chief engineer in charge.

Bellingham, Wash.—Puget Sound Pulp and Timber Company is considering new additions to mill for production of pulp for rayon manufacture, a new division of output for company, to consist of group of one and multi-story units, reported to cost over $1,500,000, with equipment. Arrangements have been made for additional water supply from municipality for operating requirements of new mill structures.

Los Angeles, Cal.—The Johns-Manville Corporation, 22 East 40th street, New York, N. Y., manufacturer of fiber board products, insulating building board and kindred products, has acquired tract of about 50 acres of land near Los Angeles, as site for new mill, for which plans will be prepared at once. It will comprise several units, with equipment installation to give employment to about 300 men. Work on superstructure will be placed under way on initial buildings in July. Entire project will cost approximately $1,000,000, including machinery. This is part of a 1937 expansion and improvement program of company to represent an investment of about $3,400,000, previously referred to in these columns.

Chicago, Ill.—The Chicago Printed String Company, 2320 West Logan boulevard, manufacturer of paper specialties, has plans under way for new addition to plant, to be two-story and basement, 60 x 125 feet, on site at Schubert and Holly avenues. Bids will be asked on general contract at early date. New

unit will cost close to $80,000, including equipment. Alfred S. Alschuler, 28 East Jackson boulevard, Chicago, is architect.

Brooklyn, N. Y.—The Crown Corrugated Company, Inc., recently incorporated with capital of $10,000, plans operation of local plant for the manufacture of corrugated boxes and containers. New company is represented by Kornblum & Katz, 26 Court street, Brooklyn, attorneys.

Detroit, Mich.—The Detroit Paper Products Company, 5800 Dominee street, manufacturer of paper specialties, is arranging financing for purchase of mill at Kalamazoo, Mich., comprising the former plant of the Western Board and Paper Company, idle for a number of years past, recently referred to in these columns. Company is issuing 25,000 shares of preferred stock, $25.00 par value, and 125,300 shares of common stock. A portion of the proceeds will be used towards the purchase of mill. On acquisition, company will make alterations and improvements, including reconditioning and installation of equipment. Plant will be used primarily for the production of a special type of paper board product. It is proposed to have the mill ready for service at early date.

Dubuque, Iowa.—The Maizewood Insulation Company, manufacturer of insulation board products, has plans under way for new addition to mill, to be two-story, 35 x 149 feet, reinforced-concrete type. Bids will be asked soon on general erection contract. New unit will be located at Camp and Salina streets, and is estimated to cost over $75,000, including equipment. C. I. Krajewski, Roshek Building, Dubuque, is architect.

Chicago, Ill.—The Commonwealth Paper Converters Company, 77 West Washington street has been chartered with capital of $50,000 and plans early operation of local plant for the manufacture of paper specialties of various kinds. New company is represented by Samuel E. Fliefield, first noted address, attorney and one of incorporators of company.

Port Townsend, Wash.—The National Paper Products, Company, manufacturer of kraft paper and paper board products, has awarded general contract to the Olympic Pile Driving Company, Port Townsend, for new dock and warehouse building at mill, for which work will be placed under way at once. Work is estimated to cost close to $100,000, with equipment. An award for dredging also has been let.

New York, N. Y.—The Forest Paper Company, 334 Hudson street, paper products, has leased five floors in building at 87-91 Van Dam Street, comprising basement, street floor, second, third and fourth floors, totaling 50,000 square feet of floor space, and will occupy for local storage and distributing plant, and company headquarters. Alterations and improvements will be made. Company plans to occupy the space about March 1, 1938, when present establishment will be removed to new location and large increased facilities provided.

Painesville, Ohio.—The Industrial Rayon Corporation, West 98th street and Walford avenue, Cleveland, Ohio, manufacturer of cellulose rayon products, has asked bids on general erection contract for proposed new mill in Painesville Township, near Painesville, previously referred to in these columns. It will comprise a large group of units, including a main three and four-story structure, 80 x 320 feet, one-story, 320 x 450 feet, one-story, 275 x 350 feet, one-story, 60x600 feet, two-story, 130 x 170 feet, and several miscellaneous buildings. A power house will be built, as well as pumping station, and two-story office building. Entire project is estimated to cost in excess of $7,500,000, including equipment. It is scheduled for completion in 1938. Wilbur Watson & Associates, 4614 Prospect avenue, Cleveland, are architects and engineers. Hiram Rivitz is president.

New York, N. Y.—The Pattern Fashion Syndicate, Inc., 243 West Seventeenth street, manufacturer of paper patterns, has leased space in adjoining building at 241 West Seventeenth street, and will use for expansion.

Brooklyn, N. Y.—The Gottlieb Paper Products Manufacturing Corporation, 54 South Second street, manufacturer of paper specialties, has leased a floor in the Knight Building, Wythe avenue and North Ninth street, and will use for expansion in storage and distributing department.

Port Arthur, Ont.—The Provincial Paper, Ltd., manufacturer of book and other paper stocks, has plans under way for expansion and improvements in mill, including new additions and installation of equipment. Entire project will cost close to $200,000, with machinery. Work is scheduled to begin soon. Company is a subsidiary of the Abitibi Power & Paper Company, Ltd., Iroquois Falls, Ont.

Montreal, Que.—The Consolidated Paper Corporation, Ltd., is carrying out an expansion and improvement program at number of mills, including installation of additional equipment at different plants. Buildings will be remodeled and improved, and facilities provided for increased production efficiency. Project as now arranged for 1937 is reported to cost over $350,000.

New York, N. Y.—The P. J. Envelope Company, Inc., has been chartered with capital of 10,000 to manufacture and deal in envelopes and kindred paper products. New company is represented by Oscar L. Kaufman, 38 Park Row, New York.

Worcester, Mass.—The Gaffin Paper and Scale Company, Inc., 67 Temple street, has been incorporated with capital of 250 shares of stock, no par value, to lead in paper products of various kinds. Maxwell H. Gaffin is president, and Robert R. Gaffin, treasurer.

New York, N. Y.—D. Serrantino & Co., Inc., has been incorporated with capital to $20,000, to deal in waste paper products. New company is represented by Ralph J. Barra, 2 Lafayette street, New York, attorney.

Chicago, Ill.—Automatic Wrapping Corporation, 205 West Wacker drive, has been organized with capital of 5000 shares of stock, no par value, to manufacture automatic paper-wrapping machines. Incorporators include E. B. Fallon and G. Robertson. George M. Stevens, 111 West Washington street, is representative.

Los Angeles, Cal.—The Polkinghore Paper Company, Inc., has been chartered with capital of $75,000, to deal in paper products of various kinds. Incorporators include E. H. Polkinghore and John Ogilvie. New company is represented by Stick & Moerdyke, 311 South Spring street, Los Angeles, attorneys.

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That considerable time and effort are devoted to standardization of paper and paper products is evidenced by the 59 titles listed under this heading. The wide range of this branch of the work is shown by the products listed for which standards have been developed, some of which are building boards, caselining papers, windows of window envelopes, sheathing papers, binders board, Braille paper for printed material used by the blind, record papers, and towels. In this group are included 35 Simplified Practice Recommendations and 6 Commercial Standards.

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Numerous suggestions have been advanced in Great Britain concerning methods available to newspapers for the absorption of the increased costs.

Work of the Import Committee

Customs officials have recently taken action on a variety of imported papers which they held to have been misclassified, or undervalued according to announcement made by the Import Committee of the American Paper Industry.

The officials have held German show counter board dutiable at the cost of production in Germany, and have collected duty on a value nearly 20 percent higher than the $58 value claimed by the importer. The board was formerly sold with the benefit of scrip marks, and when the United States Government's action forced Germany to stop the granting of a bounty by this method the cost of production was found to be materially higher than the value claimed by the importer. This procedure is now being followed at Boston, New York and Baltimore.

Binders board imported from Canada at a value of $45 per ton was held by border officials to be laminated, and a duty of 30 percent was levied. The importers then changed the character of the board to produce an unlaminated board dutiable at 10 percent, sold at the same price.

Filing folder board from Canada has been held by Customs officials to have been undervalued and duty was collected on the actual value of the goods in Canada.

Paper napkins from Japan were held to be dutiable as partially creped paper at 6 cents per pound and 15 percent.

Importers have asked the United States Customs Court to overrule Customs Officials on the following items: Screening board imported from Canada as test board, classified for duty at 20 percent, claimed by importer, a New York manufacturer of corrugated boxes, to be pulpboard in rolls for use in the manufacture of wallboard.

German Imitation Parchment, classified for duty as such at 3 cents per pound and 15 percent claimed by importer to be dutiable under the Belgian trade agreement at 2 cents per pound and 10 percent as vegetable parchment.

German tracing paper, classified for duty at 3 cents per pound and 15 percent claimed to be vegetable parchment at 2 cents per pound and 10 percent.

Japan Seek Other Pulp Supplies

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 16, 1937—So far the raw material for Japanese production of so-called staple fiber has been wood pulp. Silver fir pulp is preferred and is supplied chiefly by the United States, Norway, Finland and the mills in Kamchatka, according to a report from Consul Richard F. Boyce, at Yokohama, Japan. With an increasing output of rayon and staple fiber, Japan is seeking other sources of raw materials. At the close of 1936 the daily productive capacity in Japan was estimated at from 70 to 80 metric tons and is now said to have increased to between 130 and 140 metric tons. One of the leading producers has estimated that expansion projects under way will bring the daily output of staple fiber up to 166½ tons for the months of April, May and June, and to 198 tons for the months of July, August, and September, with a further increase to 248½ tons per month during the last three months of the year. There is, of course, a possibility that these projects will encounter a setback.

Production Ratio Report

(These statistics are based upon paper production reports to the American Paper and Pulp Association).

COMPARATIVE MONTHLY SUMMARIES

Months	1937	1936	1935	1934
January	90.3%(c)	76.1%	65.8%	.....
February	90.1%(c)	77.9%	70.0%	.....
March	90.3%(c)	76.0%	70.5%	.....
April	92.1%(c)	82.3%	70.0%	.....
May	90.4%(c)	81.6%	69.4%	.....
June	.....	80.7%	72.3%	.....
July	.....	77.3%	64.9%	.....
August	.....	81.5%	70.9%	.....
September	.....	80.5%	71.9%	58.2%
October	.....	87.6%	75.6%	64.7%
November	.....	88.0%	75.3%	61.7%
December	.....	85.9%	71.2%	59.6%
Year Average	.....	81.3%	70.5%	.....
Year to Date First 22 weeks	90.5%(c)	78.8%	69.0%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1937		CORRESPONDING WEEKS, 1936	
*May 8	89.5%(c)	May 9	81.4%
*May 15	90.4%(c)	May 16	81.9%
*May 22	91.1%(c)	May 23	83.1%
*May 29	90.8%(c)	May 30	79.8%
*June 5	85.2%(c)	June 6	81.7%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks				
Ratio Limits	May 8, 1937	May 15, 1937	May 22, 1937	May 29, 1937	June 5, 1937
0% to 50%	37	49	41	45	38
51% to 100%	283	270	275	268	154
Total	320	319	316	313	192

* Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported on January 4, 1937, Machine Improvement Survey.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

Months	1937	1936	1935	1934	Months	1937	1936	1935	1934
Jan.	80%(e)	61%	61%	....	July	....	69%	59%	....
Feb.	86%(e)	67%	67%	....	August	....	75%	65%	....
March	87%(e)	68%	67%	....	Sept.	....	76%	69%	62%
April	89%(e)	70%	61%	....	Oct.	....	82%	76%	63%
May	....	68%	61%	....	Nov.	....	79%	70%	56%
June	....	68%	65%	....	Dec.	....	74%	60%	52%

Week end. May 8, 1937.....87% Week end. May 22, 1937.....86%
Week end. May 15, 1937.....83% Week end. May 29, 1937.....85%
Week end. June 5, 1937.....76%

(e) Basic figures revised to include new members of the National Paperboard Association.

I. P. Workers Get Wage Increase

GLENS FALLS, N. Y., June 14, 1937—Announcement is made by an official of the groundwood department of the International Paper Company of the granting of a wage increase for employees of the Northern New York plants of the concern. C. E. Youngchild, general manager, said that the increase became effective June 1 and grants five cents additional hourly to workers paid 64 cents an hour or less and six cents to higher paid workers. The increase will affect several hundred employes.

Brownville Co. Elects Officers

BROWNVILLE, N. Y., June 14, 1937—A meeting of stockholders of the Brownville Paper Company was held here this week at which officers and directors for the year were chosen. Among the directors elected were Seymour M. Jones, George F. Clark, James H. Lingenfelter, R. L. Pease, S. A. Upham. Samuel A. Upham was reelected president of the company. Other officers reelected are Robert L. Pease, vice president, and James H. Lingenfelter, secretary and treasurer.

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Work of the Import Committee

Customs officials have recently taken action on a variety of imported papers which they held to have been misclassified, or undervalued according to announcement made by the Import Committee of the American Paper Industry.

The officials have held German show counter board dutiable at the cost of production in Germany, and have collected duty on a value nearly 20 percent higher than the $58 value claimed by the importer. The board was formerly sold with the benefit of scrip marks, and when the United States Government's action forced Germany to stop the granting of a bounty by this method the cost of production was found to be materially higher than the value claimed by the importer. This procedure is now being followed at Boston, New York and Baltimore.

Binders board imported from Canada at a value of $45 per ton was held by border officials to be laminated, and a duty of 30 percent was levied. The importers then changed the character of the board to produce an unlaminated board dutiable at 10 percent, sold at the same price.

Filing folder board from Canada has been held by Customs officials to have been undervalued and duty was collected on the actual value of the goods in Canada.

Paper napkins from Japan were held to be dutiable as partially creped paper at 6 cents per pound and 15 percent.

Importers have asked the United States Customs Court to overrule Customs Officials on the following items: Screening board imported from Canada as test board, classified for duty at 20 percent, claimed by importer, a New York manufacturer of corrugated boxes, to be pulpboard in rolls for use in the manufacture of wallboard.

German Imitation Parchment, classified for duty as such at 3 cents per pound and 15 percent claimed by importer to be dutiable under the Belgian trade agreement at 2 cents per pound and 10 percent as vegetable parchment.

German tracing paper, classified for duty at 3 cents per pound and 15 percent claimed to be vegetable parchment at 2 cents per pound and 10 percent.

Japan Seek Other Pulp Supplies

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 16, 1937—So far the raw material for Japanese production of so-called staple fiber has been wood pulp. Silver fir pulp is preferred and is supplied chiefly by the United States, Norway, Finland and the mills in Kamchatka, according to a report from Consul Richard F. Boyce, at Yokohama, Japan. With an increasing output of rayon and staple fiber, Japan is seeking other sources of raw materials. At the close of 1936 the daily productive capacity in Japan was estimated at from 70 to 80 metric tons and is now said to have increased to between 130 and 140 metric tons. One of the leading producers has estimated that expansion projects under way will bring the daily output of staple fiber up to 166½ tons for the months of April, May and June, and to 198 tons for the months of July, August, and September, with a further increase to 248½ tons per month during the last three months of the year. There is, of course, a possibility that these projects will encounter a setback.

Production Ratio Report

(These statistics are based upon paper production reports to the American Paper and Pulp Association).

COMPARATIVE MONTHLY SUMMARIES

Months	1937	1936	1935	1934
January	90.3%(c)	76.1%	65.8%	.....
February	90.1%(c)	77.9%	70.0%	.....
March	90.3%(c)	76.0%	70.5%	.....
April	92.1%(c)	82.3%	70.0%	.....
May	90.4%(c)	81.6%	69.4%	.....
June	.....	80.7%	72.3%	.....
July	.....	77.3%	64.9%	.....
August	.....	81.5%	70.9%	.....
September	.....	80.5%	71.9%	58.2%
October	.....	87.6%	75.6%	64.7%
November	.....	88.0%	75.3%	61.7%
December	.....	85.9%	71.2%	59.6%
Year Average	.....	81.3%	70.5%	.....
Year to Date First 22 weeks	90.5%(c)	78.8%	69.0%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1937		CORRESPONDING WEEKS, 1936	
*May 8	89.5%(c)	May 9	81.4%
*May 15	90.4%(c)	May 16	81.9%
*May 22	91.1%(c)	May 23	83.1%
*May 29	90.8%(c)	May 30	79.8%
*June 5	85.2%(c)	June 6	81.7%

The following statistics show the number of mills reporting by ratio groups:

Ratio Limits	Number of Mills Reporting, Current Weeks: May 8, 1937	May 15, 1937	May 22, 1937	May 29, 1937	June 5, 1937
0% to 50%	37	49	41	45	38
51% to 100%	283	270	275	268	154
Total	320	319	316	313	192

* Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported on January 4, 1937, Machine Improvement Survey.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

Months	1937	1936	1935	1934	Months	1937	1936	1935	1934
Jan.	80%(e)	61%	61%	....	July	....	69%	59%	....
Feb.	86%(e)	67%	67%	....	August	....	75%	65%	....
March	87%(e)	68%	67%	....	Sept.	....	76%	69%	62%
April	89%(e)	70%	61%	....	Oct.	....	82%	76%	63%
May	....	68%	61%	....	Nov.	....	79%	70%	56%
June	....	68%	65%	....	Dec.	....	74%	60%	52%

Week end. May 8, 1937.....87%
Week end. May 15, 1937.....83%
Week end. May 22, 1937.....86%
Week end. May 29, 1937.....85%
Week end. June 5, 1937.....76%

(e) Basic figures revised to include new members of the National Paperboard Association.

I. P. Workers Get Wage Increase

GLENS FALLS, N. Y., June 14, 1937—Announcement is made by an official of the groundwood department of the International Paper Company of the granting of a wage increase for employees of the Northern New York plants of the concern. C. E. Youngchild, general manager, said that the increase became effective June 1 and grants five cents additional hourly to workers paid 64 cents an hour or less and six cents to higher paid workers. The increase will affect several hundred employes.

Brownville Co. Elects Officers

BROWNVILLE, N. Y., June 14, 1937—A meeting of stockholders of the Brownville Paper Company was held here this week at which officers and directors for the year were chosen. Among the directors elected were Seymour M. Jones, George F. Clark, James H. Lingenfelter, R. L. Pease, S. A. Upham. Samuel A. Upham was reelected president of the company. Other officers reelected are Robert L. Pease, vice president, and James H. Lingenfelter, secretary and treasurer.

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Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Current Research on Pulp and Paper in the Government and University Laboratories of the United States and Canada

By Clarence J. West[1]

The following study of current research on pulp and paper making in government and university laboratories in the United States and Canada is a revision of the study published in PAPER TRADE JOURNAL 100, no. 20:41-52 (May 16, 1935) and 101, no. 7:36-42 (Aug. 15, 1935). It has been made possible through the cooperation of the directors of these laboratories, to whom the compiler wishes to express his appreciation, both for the prompt response to the request for information regarding the work being carried on in their laboratories and for their interest in this compilation.

Institutions Which Cooperated

The institutions which cooperated in this survey are listed below (in the order in which they appear in this compilation); the number of projects listed by each institution is given in ( ).

U. S. Department of Agriculture
- Bureau of Chemistry and Soils
  - Industrial—Farm Products Division (1)
  - Industrial—Farm Products Research Division (2)
- Bureau of Dairy Industry(1)
- Forest Service
  - Forest Products Laboratory(18)

U. S. Department of Commerce
- National Bureau of Standards
  - Division of Organic and Fibrous Materials(7)
  - Optics Division(1)

Government Printing Office(4)
Forest Products Laboratories of Canada
- Main Laboratories(2)
- Pulp and Paper Division(12)

National Research Council of Canada(3)
Industrial Committee of Savannah, Inc.(1)
Wisconsin State Board of Health(3)
Alabama, University of(3)
Boyce Thompson Institute for Plant Research(1)
Cincinnati, University of(1)
Columbia University(1)
Idaho, University of(5)
Institute of Paper Chemistry(42)
Iowa State College(1)
McGill University
- Division of Industrial and Cellulose Chemistry(5)
- Department of Botany(1)

Maine, University of(2)
Massachusetts Institute of Technology(3)
Mellon Institute of Industrial Research(1)
Michigan, University of(2)
Minnesota, University of(2)
New York State College of Forestry(8)
North Carolina, University of(2)
Ohio State University(12)
Oregon State Agricultural College(1)
Washington, University of(15)

[1] Member TAPPI. Chairman, Committee on Abstracts and Bibliography, Technical Association of the Pulp and Paper Industry.

U. S. DEPARTMENT OF AGRICULTURE
Bureau of Chemistry and Soils
Washington, D. C.

Industrial-Farm Products Division

(1). PROJECT: Paper and fiberboard investigations.
INVESTIGATORS: D. F. J. Lynch, T. D. Jarrell, P. B. Jacobs, E. R. Whittemore and S. I. Aronovsky.
PURPOSE: Study of technical and economic factors and surveys on the utilization of fibrous farm wastes for the manufacture of paper, rayon, and fiberboard, and other cellulose products.

ACCOMPLISHMENTS: Cooperative experimental test runs with cornstalks, flax straw, artichoke tops, and wheat straw were made in the pilot plant of a commercial firm which has developed equipment for the production of coarse paper pulp from straw by a continuous soda-cooking process at atmospheric pressure. The results show that improved strawboard pulp can be produced from all these materials, but that flax straw is the most promising as a source of high-quality pulp. The possibility of producing better grades of bleached pulp from straw was indicated. Cornstalks and wheat straw were digested with no particular difficulty. Artichoke tops proved hard to digest, and the production of paper pulp from this material would probably involve higher costs for additional soda or pressure cooking. Because of its unusual resistance to wetting by water, the pith from artichoke tops appeared to have potential value as an absorbent in the manufacture of dynamite.

WORK IN PROGRESS: In cooperation with Iowa State College, Ames, Iowa, study of the chemical and mechanical treatment of agricultural products and by-products and of wastes from manufacturing industries using agricultural materials for the production of paper, insulating board, building board, press board, and alpha cellulose for rayon or similar products.

SUPPORT: Government funds.

Industrial-Farm Products Research Division

(1). NAME OF PROJECT: Lignin investigations.
INVESTIGATORS: Max Phillips and M. J. Goss.
PURPOSE: To make fundamental chemical and bio-

chemical studies of lignin with a view of determining the chemical constitution of lignin and to develop methods for utilization of lignin.

ACCOMPLISHMENTS: Up to the present time the lignin investigations in this Bureau have dealt with and have been successful in the consideration of several problems concerned with the structure of lignin, the utilization of lignin in the animal body, the role of lignin in the formation of humus in the soil, the demonstration of the relation between the lignin content of wheat straw and "lodging", the determination and identification of the chemical substances produced when lignin from agricultural waste materials and the lignin from waste sulphite liquor are subjected to dry distillation, the development of improved methods for the quantitative determination of lignin, the production of synthetic resins from lignin, and the production of a fertilizer material from the lignin sulphonic acid in sulphite waste liquor.

WORK IN PROGRESS: (1) Studies of chemistry of lignin from cereal straws. (2) Studies in the quantitative estimation of lignin. (3) Studies of methods for isolation of lignin. (4) Oxidation and reduction studies of lignin. (5) Studies of mechanism involved in the formation of lignin by the plant.

SOURCE OF FUNDS: Congressional appropriation for agricultural chemical investigations.

(2). PROJECT: Bagasse cellulose.

INVESTIGATORS: H. T. Herrick, D. F. J. Lynch, and M. J. Goss.

PURPOSE: To determine the possibility of producing a cellulose suitable for commercial purposes from sugar-cane bagasse.

ACCOMPLISHMENTS: A method has been developed by which an excellent grade of industrial alpha-cellulose can be produced from sugar-cane bagasse.

WORK IN PROGRESS: Private interests in Hawaii have constructed a small plant in which experiments to determine the economic value of the process are being conducted, under the supervision of a Government chemist.

SUPPORT: Government funds are paying the chemist's salary, and the other expenses are borne by commercial organizations interested in the process.

Bureau of Dairy Industry

(1). PROJECT: Commercial casein.

INVESTIGATORS: E. O. Whittier, William White, P. D. Watson, and S. P. Gould.

PURPOSE: To increase the demand for domestic casein by discovering and developing methods for improving its quality and making it more uniform, by developing improved methods of testing and of use, and by finding new uses.

ACCOMPLISHMENTS: Determination of the relationships between the commonly used tests for quality of caseins and the characteristics of paper coatings containing the tested caseins. Discovery of some of the most frequent causes of foaming in clay-casein slips for paper coating and of the means of avoiding such foaming.

WORK IN PROGRESS: Study of solvents for casein and casein fractionation which may prove of value to paper coaters. Studies of use of casein in coatings, structural materials, and fibers.

SUPPORT: Government funds.

Forest Service

Forest Products Laboratory, Madison, Wis.

The work of the Forest Products Laboratory relates to the interests of the pulp and paper industry principally through its Pulp and Paper Section, although other sections of the Laboratory are engaged upon problems of considerable interest to this industry. The work of one of the senior technical men in the Section of Derived Products, dealing with the microstructure of wood fibers, is an excellent example. The logging and milling studies of the Section of Industrial Investigations, which invilve field observations covering both the kind and the extent of the actual current utilization of representative forest tracts as they are harvested, also develop much information of interest to pulp and paper manufacturers. Studies in the field of silviculture, executed by the Section of Wood Technology, that correlate growth conditions to physical properties of the resulting timber must soon be extended to the pulp and paper making properties as reforestation comes more and more to the fore. The design and the utility of corrugated and of solid fiber containers has long been a field of work covered by the Section of Timber Mechanics.

The fundamental objectives of the Section of Pulp and Paper, all of which lie in the field of applied science, are as follows:

First, increased and improved utilization of particular species, which may now be either in actual use or merely available.

Second, more nearly complete utilization of pulp wood at the mill.

Third, utilization of wastes.

The secondary objectives in the fundamental field, equally important, are as follows:

First, improved methods for evaluating papers and boards relative to their use requirements, pulps and stuffs relative to commercial papers and boards, pulp woods relative to pulp, and land and forest relative to pulp wood.

Second, increased knowledge of the effects of the machine and the fiber-processing variables, of the pulping variables, and of the land and forest variables.

These objectives are summarized below:

1. Fundamental work
   - A. Improved methods for evaluating:
     - a. Paper products relative to their use
     - b. Pulps and stuffs relative to paper products
     - c. Pulp woods relative to pulps
     - d. Lands and forests relative to pulp wood
   - B. Increased knowledge of the effects of:
     - a. Machine variables
     - b. Fiber-processing variables
     - c. Pulping variables
     - d. Land and forest variables
2. Applied work

   Improved and increased utilization of:
   - a. Particular species
   - b. Pulp wood at the mill
   - c. Waste

(1). PROJECT: Increased utilization of Southern species for pulp and paper.

INVESTIGATORS: C. E. Curran, M. W. Bray, G. H. Chidester, E. R. Schafer, J. S. Martin, J. C. Pew, F. A. Simmonds, P. S. Billington, S. L. Schwartz, E. L. Keller, and C. E. Hrubesky.

PURPOSE: To increase the utilization of particular Southern species in the pulp and paper field to permit expansion of domestic production when required, manufacture in the most economical location, and improved practice of forestry through selection. To determine the suitability for pulp and paper making of all Southern woods of commercial importance (a) by evaluating their adaptability to standard methods of pulping; (b) by proper selection of the wood of a given species to more effectively meet the requirements of a given pulping process or the subsequent use of the finished product; (c) by developing modifications of standard pulping methods or new methods

which will more effectively utilize such species or diverse physical or growth characteristics of a given species; (d) by modification or improvement of physical or chemical processing, and paper making procedures to produce papers suitable for commercial use.

ACCOMPLISHMENTS (as of July, 1936): Preliminary investigations of the pulping of Southern species by all standard processes were made prior to 1928, and are reported in U. S. Dept. Agr., *Bulls.* No. 72, 343 and 1485. This work established the suitability of Southern pines for kraft and for bleached sulphate pulps and papers. The semi-chemical process was developed and applied to Southern hardwoods.

Since 1928, intensive pulping studies have been made upon loblolly, longleaf, slash, shortleaf, and sand pines, and some work has been done with gums and other hardwoods. An improved sulphate pulping method and chlorination bleaching procedure has been developed, which produces strong white papers from all the pines. Application of the sulphite and groundwood processes to the pines has been studied, and such papers as newsprint, book, mimeograph, boxboard, etc., produced on a laboratory basis. Work is being continued in the application of the standard sulphite, sulphate, mechanical, and semi-chemical pulping processes and in the bleaching and processing of the resultant pulps, in producing papers of commercial utility.

A systematic evaluation of Southern pines, particularly second growth, has been made, revealing remarkable variations in wood quality due to conditions of growth. During the past three years a careful study of such factors as rate of growth, ratio of springwood to summerwood, heartwood content, occurrence of compression fibers, and similar characteristics, have shown that growth conditions are apparently more significant than species differences, and a large amount of data have been compiled, bearing on the relationships between conditions of growth and pulp and paper making properties. These findings are of significance both to the pulp manufacturer and to the forester. During 1935-1936, intensive studies of this nature were made using loblolly pine and this work will be continued on other Southern pine species.

WORK IN PROGRESS: Correlation of growth variables and pulping quality will be continued, using shortleaf and other Southern pines, and applying all standard pulping processes. The semi-sulphite process will also be employed. Growth factors will include springwood and summerwood ratios, heartwood content, growth rate, density, compression and high fibril angle wood, sap staining, etc. Special bleaching studies, using multiple stages and chlorination, will be made. The production of standard paper grades from Southern species will be continued.

SUPPORT: Government appropriations.

(2). PROJECT: Increased utilization of Western pulpwood species for pulp and paper.

INVESTIGATORS: C. E. Curran, G. H. Chidester, M. W. Bray, J. S. Martin, E. R. Schafer, and J. N. McGovern.

PURPOSE: *See* this heading under Southern species.

ACCOMPLISHMENTS (as of July, 1936):

Evaluation of woods and pulps: Coastal Douglas fir, white fir, silver fir, and Western hemlock of different age and growth rate have been evaluated; the chemical and physical properties of six more common species and of sulphate pulps produced from them have been determined.

Alkaline pulping: In the sulphate pulping of Douglas fir, relatively high chemical ratios at low concentration were found most effective in reducing the bleach requirements while maintaining strength properties and pulp yields; two stage cooking methods with sulphate and semi-chemical cooking liquors applied interchangeably resulted in somewhat stronger and easier bleaching pulps. Experiments have been made on the effect of caustic-sulphide ratio at constant total alkalinity. Using low chemical concentrations, maintaining alkalinity at a fixed value, produces strong Douglas fir sulphate pulps of excellent unbleached color and for which the bleach requirement is lower than for pulp prepared from the same species by standard methods. Silver fir gives high yields of strong kraft pulp, and easily bleachable sulphate pulps have also been prepared from this species; these pulps process rather slowly in pebble mill in comparison with similar pulps made from the Southern yellow pine.

Sulphite pulping: Douglas fir may be pulped by substitution of the lime base with soda or ammonia or by a two-stage procedure, the first stage for impregnation of the wood with sodium sulphite, followed by digestion of the wood with standard lime base liquor. Data have been obtained on the penetration of Western hemlock, Douglas fir, and lowland white fir, heartwood and sapwood chips by cooking liquor. The time, temperature, yield, and heartwood and sapwood relations have been obtained for Western hemlock and, in part, for lowland white fir. A high yield of sulphite pulp can be produced from silver fir, the outstanding characteristic being its high tearing strength. The pulping characteristics of virgin and second growth Western hemlock, having fast and slow growth rates, have been compared under similar conditions of pulping. Both types of the first growth wood gave lower yields of pulp than the two types of the second growth wood.

Mechanical pulping: Bleaching experiments on Western hemlock groundwood have been made. Oxidizing agents in alkaline solution are more effective than the usual reducing agents, but for economic reasons these are of doubtful commercial applicability. The reddish color in Western hemlock groundwood has been found due to inclusions located originally in the ray cells; the coloring matter appears to be related to phlobaphene tannins.

WORK IN PROGRESS: Sulphate, sulphite, and semi-chemical pulping of Douglas fir and Western hemlock, including correlation of growth variables. Further investigations of color improvement of Western hemlock groundwood pulps.

SUPPORT: Government appropriations.

(3). PROJECT: Utilization of seed flax straw and other crop plant wastes.

INVESTIGATORS: C. E. Curran and E. R. Schafer.

PURPOSE: To prepare a departmental publication covering investigations of the suitability of seed flax straw for pulp and paper production.

ACCOMPLISHMENTS: The manuscript of the bulletin has been completed, and is in process of final editing, prior to publication.

(4). PROJECT: Effect of the variables of alkaline pulping.

INVESTIGATORS: C. E. Curran, M. W. Bray, and S. L. Schwartz.

PURPOSE: To learn the effects and means of controlling the independent variables of alkaline pulping as fundamental to the prosecution of applied research.

ACCOMPLISHMENTS (as of July, 1936): Early work has been reported in U. S. Dept. Agr., *Bulls.* 80 and 1485, and in journal articles. A semi-kraft and semi-chemical process of pulping were developed.

Recently investigations have been made of the fundamental relationships between yield-quality and time, temperature, and raw material properties. Some data have been obtained on the effect of the ratio of caustic to sulphide in the sulphate process, and of sulphite to carbonate

in the semi-chemical process. In sulphate pulping, the effect of concentration and ratio of chemical to wood has been investigated. Increasing the chemical concentration materially increases the rate of delignification but also tends to destroy cellulose. Improved yields and bleaching properties result through use of lower concentrations and increased chemical ratios. Factors involved in chip penetration and moisture in chips have been evaluated and adjustments necessary to more satisfactory pulping have been developed. The penetration properties of several species, notably Southern pines and Western Douglas fir, have been examined and the limiting values determined; New Zealand white poplar and date palm fronds have also been studied.

WORK IN PROGRESS: Continuation of autoclave cooking experiments dealing with the effect of varying the independent variables of the sulphate process on the yield and quality of pulp. This work will include (a) study of the effect of varying sulphidity at constant concentrations and of constant effective alkali content in sulphate cooking liquors; (b) effect of time of penetration on alkaline pulp quality; (c) development of new pulping agents, particularly chlorinating reagents; (d) effect of buffering agents in soda pulping.

SUPPORT: Government appropriations.

(5). PROJECT: Effect of the variables of acid pulping.

INVESTIGATORS: C. E. Curran, G. H. Chidester, and J. N. McGovern.

PURPOSE: To learn the effects and means of controlling the independent variables of acid pulping as fundamental to the prosecution of applied research and industrial practice.

ACCOMPLISHMENTS (as of July, 1936): Much exploratory work in this field relative to species has been published in U. S. Dept. Agr., *Bull.* No. 1485. The chemistry of the sulphite process has been investigated, employing white spruce, Eastern hemlock, and hardwoods, yielding important data which has resulted in improved pulping practice for these species through commercial application. Use of high acid concentrations (up to 20 per cent) and pressures (up to 400 pounds) have indicated a slight improvement in the yield and strength of pulps produced and greatly reduce time of pulping, even when digestions were made at low temperatures. The independent effect of pressure was negligible. Preliminary experiments with nitric acid showed that it worked best at atmospheric pressures, that yields were low but that the pulp was well delignified. Phenol produced pulps slightly darker than sulphite pulp from the same species. The pulp purity was high. Recovery of the reagent was rather unsatisfactory and indicated a high cost.

WORK IN PROGRESS: Extension of concentration studies to include ratio of acid to wood and concentration changes during the cook. Use of phenol, nitric acid, and other acid pulping agents. Sulphite pulping of Lake States species and hybrid poplars.

SUPPORT: Government appropriations.

(6). PROJECT: Effect of variables of "soda base" (or other soluble base) in sulphite pulping.

INVESTIGATORS: G. H. Chidester, C. E. Hrubesky, and P. S. Billington.

PURPOSE: To learn the effect and means of controlling the independent variables of "soda base" sulphite pulping as fundamental to the prosecution of applied research and industrial practice.

ACCOMPLISHMENTS (as of July, 1936): Investigation of the comparative merits of soda, ammonia, and standard lime base sulphite liquors has been made on both a bomb-scale and semi-commercial scale. Slight advantages of the soda and ammonia bases over the lime base have been noted with respect to penetration, color of the finished pulp, yield, and bleach requirement. Further advantages of the soda and ammonia base liquors resulted from the greater solubility of their sulphites which enables their use in higher concentrations, further improving the yield and quality of the pulp. Methods have been developed for the recovery of both soda and ammonia from the waste liquors. Soda base liquors were evaporated, burned, and the chemical recovered by treating the ash with either sodium bicarbonate or carbon dioxide. Ammonia was recovered from ammonia base liquors by treatment with lime, followed by steam distillation.

WORK IN PROGRESS: Studies of the effect of the concentration of combined sulphur dioxide. Additional work on liquor recovery and reuse.

SUPPORT: Government appropriations.

(7). PROJECT: Effect of variables of mechanical pulping.

INVESTIGATORS: E. R. Schafer and J. C. Pew.

PURPOSE: To learn the effects and means of controlling the independent variables of mechanical pulping as fundamental to applied research.

ACCOMPLISHMENTS (as of July, 1936): The earlier work of Thickens, McNaughton, and others (U. S. Dept. Agr., *Bulls.* 127, 343, and 1485) has been extended to a study of temperature, consistence, and pressure. Since 1932, the work has continued with especial attention to the temperature factor. In general, the grinding process is favored by high temperatures, provided excessive pulp consistencies are prevented by use of warm shower water. Preheating the wood to the high temperature and subsequently grinding, without cooling, at 190 to 210 deg. F. results in markedly longer and stronger pulps. This advantage, however, is offset by an equivalent increase in power consumption and a slight decrease in color. A new grinder has been designed, which will permit a much more complete evaluation of factors involved in the process.

WORK IN PROGRESS: Effect of varying viscosities in grinding; use of neutral salts, swelling agents, etc., in grinding; installation of improved experimental grinder equipment.

SUPPORT: Government appropriations.

(8). PROJECT: Evaluation of pulps and stuffs.

INVESTIGATORS: P. K. Baird, F. A. Simmonds, C. O. Seborg, and E. L. Keller.

PURPOSE: To establish physical and chemical methods for evaluating pulps and stuffs in relation to papers. The general objectives are: (1) to identify all chemical and physical properties of pulps and stuffs; (2) to develop methods and apparatus for determination of quantitative data on all properties; (3) to intercorrelate properties and relate them to the use requirements of stuffs.

ACCOMPLISHMENTS (as of July, 1936): Prior to 1935-1936, a number of test methods were developed. A complete revision of all testing methods is in progress. Close cooperation has been maintained with TAPPI testing committees and other agencies. Progress has been made on the relation of disperse viscosity to other wood and pulp properties. Investigation of the "hydration" phenomenon in beating resulted in the development of a dehydration or water replacement method, and identification of the physical factors involved, and their relation to the drainage characteristics of pulps and stuffs. It has been shown that the permanganate bleachability test apparently cannot be modified to apply to all pulps. A rapid bleachability test was found applicable to a 3-stage chlorination-hypochlorite system for sulphite pulp. A new apparatus has been de-

signed for the disperse viscosity test which greatly facilitates use of the method. It has been proven that extreme beating increases the hygroscopicity of chemical wood pulps and that bleaching lowers it. Progress has been made on a method for measuring the stiffness in bending of single fibers, and on a method for differentiating bleached sulphite and sulphate pulps.

WORK IN PROGRESS: Continuation of the study of the identification and delineation of pulp properties. *Physical properties*: Study of the nature and rate of sorption of water vapor by fibers; study of the sorption of the several components of wood as isolated by various means; investigations into the fundamental nature of "hydration." Method to measure fiber stiffness in bending. Comparison of beater and pebble mill processing. *Chemical properties*: The adsorption of chemicals by pulps as related to their quantitative colorimetric differentiation. Development of a rapid bleach test for kraft pulps. Fiber surface studies by means of tannic acid adsorption. Differentiation of bleached sulphate and bleached sulphite fibers.

SUPPORT: Government appropriations.

(9). PROJECT: The variable of fiber processing and stuff preparation.

INVESTIGATORS: P. K. Baird, F. A. Simmonds, and E. L. Keller.

PURPOSE: To develop means of controlling and to learn the effects of the variables of fiber processing and stuff preparation. The general objectives are: to delineate the independent and dependent variables in the various types of fiber processing and stuff preparation; to develop new control procedures and apparatus for the variables of the various processes; to study the effects of the variables of the processes on the properties of pulps; to design and prepare stuffs of definite physical and chemical properties. This field includes all chemical and physical processing of materials from pulping up to the operation of the paper machine.

ACCOMPLISHMENTS (up to July, 1936): *Chemical processing*: The effect of stock consistencies up to 7 per cent has been studies, using sulphite pulp, and measuring reaction rates, pulp quality and bleach efficiency. The limiting ranges of bleaching at high consistence were ascertained in this work. Multiple stage chlorination bleaching has been investigated, including a newly proposed liquid chlorine and alkali system. Succinchlorimide and other unusual reagents have been tried for bleaching purposes. The effect of the iron content of water in bleaching has been studied. Some work has been done on the chemical acceleration of beating by the use of bases.

Physical processing: The application of the rod mill as a pulp beater has been investigated. Studies of the factors involved in jordaning have been made. A manual of stuff preparation has been prepared in tentative form covering the proper operation of all laboratory scale processing equipment in the handling of experimental pulps and in duplicating the stuff properties of commercial paper furnishes.

WORK IN PROGRESS: A continuation of the study to identify and delineate all of the independent and dependent variables in beating, jordaning, milling, and other types of fiber processing. Studies in developing new control procedures and apparatus for the variables of each process; specific studies in: application of laboratory scale multi-stage chlorine-calcium hypochlorite bleaching; determination of the effect on pulp color of the iron content of water in bleaching; study of effect of jordan variables, especially tackle, on pulp properties; study of the effect of temperature, consistence and hydrogen ion concentration in beating.

SUPPORT: Government appropriations.

(10). PROJECT: Evaluation of wood pulp papers and paper boards.

INVESTIGATORS: P. K. Baird, C. E. Hrubesky, and M. Heinig.

PURPOSE: To establish physical and chemical methods for evaluating papers and their use requirements, as tools essential to applied research and technical control in the industry. The general objectives are: (1) to identify all chemical and physical properties of papers and paper boards; (2) to develop test methods and apparatus for determination of quantitative data on all properties; (3) to intercorrelate properties and relate them to requirements of use.

ACCOMPLISHMENTS (as of July, 1936): Methods have been developed for measuring opacity, volumetric composition, air and vapor transmission characteristics, stress-strain relations and surface roughness. A study has been made of the effect of the structural factors of sheet density upon properties in relation to the design of sheets for specific uses. The effect of humidity on the properties of container board, supplementing earlier work, was evaluated. A modified procedure for preparing test sheets was developed and studies of the sheet making variables as they affect the uniformity of results has been completed. An improved laboratory model tester for determining the surface characteristics of all types of papers and boards has been completed, and further study given to adapting it for industrial use.

WORK IN PROGRESS: Improvement of existing methods and development of new methods for measuring specific sheet properties, involving specifically: (1) structure properties of surface smoothness and fiber arrangement, including development of surface roughness tester and a formation tester; (2) determination of the vapor transmission and other properties significant to the use of building papers in small house construction.

SUPPORT: Government appropriations.

(11). PROJECT: The variables of the papermaking process.

INVESTIGATOR: P. K. Baird.

PURPOSE: To develop means of controlling and to learn the effects of the variables of the paper machine and converting equipment. The general objectives are: (1) to delineate the independent and dependent variables in the various parts of the papermaking equipment; (2) to develop new methods and devices where necessary for control and record of the variables; (3) to study the effects of the variables on paper and board properties; (4) to design and make papers of definite physical and chemical characteristics. This field includes all the papermaking processes from the stock going onto the wire through the operation of the paper machine and accessory equipment.

ACCOMPLISHMENTS (as of July, 1936): The development of this project has required extensive changes in the design and operating characteristics of the experimental paper machine in order to make acceptable papers of uniform quality and to control and record the operation of the process variables involved. New fourdrinier, press and dryer sections have been designed and installed. The head box has been rebuilt along more scientific lines and a stuff metering system and controlled white water system developed and perfected. A precision electric sectional drive, a positive chain drive for each dryer section, and antifriction bearings on rolls which contact the paper in the press and dryer sections have been purchased and placed in service. Numerous minor improvements effecting operation and the product have been made.

WORK IN PROGRESS: Continuation of the study to develop improved devices for control of the draw, temperature, formation of sheet, etc.; specific items to be considered are dryer temperature control, stock pH control, drawmeter, tensometer, moisture controller, and finish indicator. Studies of the effect of the different variables such as draw, wet and dry pressing of sheet, dryer temperature, etc.; specific problems are effect of flow box on formation and effect of wet press pressure. The ability to design and manufacture a sheet of paper to definite specifications is the ultimate goal of these studies.

SUPPORT: Government appropriations.

(12). PROJECT: Increased utilization of mill waste effluent.

INVESTIGATORS: C. E. Curran and E. R. Schafer.

PURPOSE: To reduce waste of timber through increased utilization of paper and pulp mill effluent.

ACCOMPLISHMENTS (as of July, 1936): A large amount of work has been done relative to the methods of measuring white water losses and pointing out means of reducing or eliminating this source of waste. In 1930-1932 tests were made to determine the effect of the reuse of white water on the properties of the paper. Active work on reuse of waste sulphite liquor in cooking has been carried on during the past five years and the effect of such reuse on the yield, quality, and use characteristics of the resulting pulps determined. The practicability of use of side relief liquor up to 50 per cent and also waste sulphite liquor in sulphite pulping has been demonstrated. However, use of waste liquor above 25 per cent induces a tendency toward burned cooks.

WORK IN PROGRESS: Study of reuse of waste sulphite liquor. Contacts are being continued with TAPPI and pulp and paper mills in connection with white water problems and matters connected with stream pollution.

SUPPORT: Government appropriations.

(13). PROJECT: Chemical composition of wood; cellulose and hemicellulose.

INVESTIGATORS: G. J. Ritter and R. L. Mitchell.

PURPOSE: To collect and publish information regarding the chemical composition of wood and its constituents as an aid in the utilization of wood.

ACCOMPLISHMENTS: (as of July, 1936): Holocellulose, the total cellulose and hemicellulose in extractive-free wood, has been isolated as a solid from maple, spruce, and white oak. These three holocelluloses have been studied regarding their pentosan, acetyl, methoxyl, and carboxyl content. In addition, an easily hydrolyzed portion of the spruce holocellulose has been intensively examined for its simple sugar residues; a corresponding examination of a similar portion of maple holocellulose has been started.

WORK IN PROGRESS: The intensive study on the isolation and identification of the components in the easily hydrolyzable portion of maple holocellulose will be continued. A TAPPI committee project to improve the analytical procedure, so as to diminish the losses which now occur during the isolation of the holocellulose, is in progress. Microscopical examinations of the material in its various stages of isolation and degradation will be made.

SUPPORT: Government appropriations; TAPPI research grant.

(14). PROJECT: Chemical microstructure of wood.

INVESTIGATOR: G. J. Ritter.

PURPOSE: To determine the microstructure of wood fibers and the locations of some of their components by examining the fibers microscopically during their treatment with chemicals.

ACCOMPLISHMENTS (as of July, 1936): The location of the cellulose and the lignin in wood and the nature of some physical properties manifested by fibers during growth and the absorption of swelling agents have been determined by microscopical and x-ray means. It has been shown by chemo-microscopical procedure that wood fibers are composed of several types of microstructural units. It has also been demonstrated that the ash residue, obtained by burning wood, is a continuous structure, which forms a skeleton of the wood. During 1935-1936 confirmatory evidence of previous data that disproves the segmentation of fibers by cross walls has been obtained. Results were collected that further prove the structure of the outer layer of delignified wood fibers to be crystalline and fibrillar rather than amorphous and homogeneous.

WORK IN PROGRESS: A continuation of the development of colored photography and its application to the recording of experimental results. The location of the easily hydrolyzable portion of the hemicellulose in cross sections of holocellulose. A study of the ash from wood sections after they have been freed from different types of extraneous materials, to determine whether the ash in wood structure is organically bound or is a simple inorganic salt.

SUPPORT: Government appropriations.

(15). PROJECT: Wood as a colloid.

INVESTIGATORS: A. J. Stamm and R. M. Seborg.

PURPOSE: To study the physical and colloidal properties of wood and wood products, and to devise methods for modifying these properties.

This project is noted because it includes a study of the wood-liquid relationships and may be a measure of the differences in the reactivity of chemically identical pulps. It also includes a study of the capillary structure of wood, and the colloidal properties of cellulose.

(16). PROJECT: Study of the chemical and physical-chemical properties of lignin.

INVESTIGATOR: E. E. Harris.

PURPOSE: To study the chemical and physical properties of lignin and the effect they may have upon chemical and mechanical properties of wood.

ACCOMPLISHMENTS (as of July, 1936): Various methods for the isolation of lignin have been studied and the isolated products compared. The sulphuric acid method was found most satisfactory and has been used for preparing lignins for further study. Hardwood lignins differed from those of softwoods in respect to methoxyl content, ease of methylation, and solubility. Extended studies have been made on maple lignin, including its behavior on distillation. A study of the reactions of lignin show, by analogy with the reactions of hydroxyfurane compounds, that lignin must be a polymerized hydroxyfurane; a special study has been made of the nitro compounds. Molecular weight determinations by various methods have been carried out.

WORK IN PROGRESS: A continuation of the study of the chemical reactions of lignin as a means of determining structural groups in lignin, and also of analytical methods. The reactions taking place and the products formed during the isolation of lignin by organic solvents. Attempt to establish the hydroxyfurane structure of lignin. Measurements of the shape factor and molecular weight determinations of lignin in solution by viscosity, diffusion, osmotic pressure, dielectric constant, and spreading measurements.

SUPPORT: Government appropriations.

(17). PROJECT: Logging and milling studies—pulpwood and other products.

INVESTIGATORS: J. B. Cuno and ECW personnel.

PURPOSE: To provide specific data on production costs

and merchantable values for bolts and trees in non-sawlog stands in relation to utilization standards and management for sustained yield.

ACCOMPLISHMENTS (as of July, 1936): The cost and value of pulpwood from trees of different sizes and qualities have been investigated to some extent in both the Gulf and Coastal Plain regions in the light of their bearing on management of pulpwood stands, the effect on pulp and paper qualities, and the feasibility of setting up pulpwood grades similar to log grades as a basis of purchase and sale for thinnings and worked-out timber. All these studies are forerunners to the development of a plan of handling for the naval stores section, which will show the most profitable and practical methods for cutting and utilizing the timber and at the same time perpetuating the stand.

WORK IN PROGRESS: In cooperation with the Appalachian Forest Experiment Station, complete analysis of pulpwood production costs in Virginia and Carolina. Continued production cost and yield studies for products of integrated utilization, with special reference to sorting and grading of pulpwood. Advantages and methods of grading pulpwood will be tested out this year on jack pine in the Lake States in cooperation with the Pulp and Paper Section and a commercial operator.

SUPPORT: Government funds.

(18). PROJECT: Study of corrugated fiber and solid fiber shipping containers.

INVESTIGATOR: T. A. Carlson.

PURPOSE: To develop better fiber boxes through the correlation of the strength of the board with manufacturing variables and the properties of the paper; and through a correlation of the performance of the box with the strength of the board and the box-making variables. To develop methods of evaluating the properties of fiberboard materials for shipping containers.

ACCOMPLISHMENTS: Special machines have been installed for making corrugated and solid fiber test board under accurately controlled conditions. Tentative methods of test have been developed for accurately determining the modulus of elasticity of paper in tension and the bending strength, column strength, and shear rigidity of corrugated board. About 30 kinds of corrugated board have been made using different kinds of liners and corrugating materials. These boards have been tested for column strength and shear rigidity, and the component parts have been tested in tension. Analysis of these data indicate that corrugated board can be treated as an engineering material and with further study and special mathematical analysis, it will be possible to predict properties and performance of the board from the characteristics of the component parts.

WORK IN PROGRESS: A continuation of the study to correlate, through tests and special mathematical treatment, the strength properties of the component parts with the properties of the built-up board and the strength of the completed box; study of the influence of manufacturing variables on the properties of the board. Also, a further study for developing methods of testing the component parts of corrugated board, the built-up board, and the completed box.

SUPPORT: Government appropriations.

U. S. DEPARTMENT OF COMMERCE NATIONAL BUREAU OF STANDARDS, WASHINGTON, D. C.

Division of Organic and Fibrous Materials, Paper Section

(1). PROJECT: Development of TAPPI standard testing methods.

INVESTIGATORS: B. W. Scribner and F. T. Carson.

PURPOSE: To assist the Technical Association of the Pulp and Paper Industry in the development of official Association methods for testing paper and paper materials. This involves direction of the work of the Association's Paper Testing Committee, which includes cooperative development testing carried on by several subcommittees; participation in the laboratory development work of the sub-committees; and participation in the work of the Association's Committee on Standards, which is charged with the general supervision of all of the standardizing activities. The standardization of paper testing methods, which is the first standardization of the Association, was initiated in 1925.

ACCOMPLISHMENTS: Paper testing methods completed, 39; methods revised, 13; methods in process of revision, 9; methods being developed, 10.

(2). PROJECT: Improvement of wear resistance of U. S. paper currency.

INVESTIGATORS: C. G. Weber and F. T. Carson.

PURPOSE: Paper currency becomes unfit for further service because of cracking and soiling of the surface, which obscures the printing, and loss of the stiffness and hardness necessary for efficient handling of it by financial organizations. Attempt is being made to retard these wear effects.

ACCOMPLISHMENTS: A modification of the papermaking process was developed in the Bureau mill, by means of which the strength of the paper was greatly increased. This practically eliminated extensive breakage of the paper bills which was prevalent at the time. Also, the manufacture of currency paper from the various grades of rag and wood fibers was investigated to gain such information in case change from cotton and linen rags should become necessary. The results of these manufacturing studies have been published. Considerable confidential information has been obtained relating to improvement of wear quality by means of various sizing materials, and to the processes employed in converting the paper into currency. Methods for evaluating the wearing quality of experimental currency paper have been developed. These consist of the use of a crumpling device by means of which the natural wear is simulated, and tests of the crumpled paper for disintegration of the fiber structure, decrease in strength, and decrease in water and grease resistance.

WORK IN PROGRESS: Continuation of the study of use of sizing materials for improving the wearing quality of the paper currency.

SUPPORT: This work has been carried out in cooperation with, and partial financial support of, the Bureau of Efficiency (which has now been abolished), and the Treasury Department. The latter is continuing its assistance and financial support.

(3). PROJECT. Development of Government specifications for paper and paper products.

INVESTIGATORS: B. W. Scribner and C. G. Weber.

PURPOSE: Development or improvement of purchase specifications to assist in securing at minimum cost the products best suited for the requirements of the Government, and in promoting fair competition for the purchase contracts. This work requires service on various committees, laboratory testing and investigation, and papermaking research.

ACCOMPLISHMENTS: Aid has been given in the development of the 150 (approximately) specifications now in use, and in such revision of them as has been found necessary. Many requirements are based on test methods and

quality standards developed at the Bureau. The reports of most of these investigations are contained in a number of Bureau publications.

WORK IN PROGRESS: Six specifications are being revised and four new ones are being developed.

(4). PROJECT: Relation of physical properties of lithographic papers to their behavior in offset printing processes.

INVESTIGATOR: C. G. Weber and M. N. V. Geib.

PURPOSE: The development of fundamental information on the relation of fiber properties of papers to dimensional changes of paper during printing; determination of the influence of conditioning factors; development of information on commercial scale conditioning of paper. This is to minimize misregister of successive color prints, which causes considerable waste in lithographic printing.

ACCOMPLISHMENTS: Six publications have been issued, giving the results of experimental printings on a commercial scale, and laboratory investigations, of soda-sulphite, wood-fiber papers. The more important findings reported are that, contrary to general belief, such papers do not stretch under printing pressure, change of dimensions being caused by change in moisture content; that to avoid change in moisture content, even in an air-conditioned pressroom, the initial moisture content must be greater than that in equilibrium with the pressroom air; and that the dimensional changes which cause misregister can be decreased by beating the fibers in a certain way.

WORK IN PROGRESS: The studies mentioned are being extended to other grades of wood fiber papers and to rag fiber papers.

SUPPORT: This work is carried out in cooperation with the Lithographic Technical Foundation, with the assistance of an Advisory Committee appointed by the Foundation, and with the partial financial support of lithographic paper manufacturers.

(5). PROJECT: Relation of papermaking materials and processes to the quality of book papers for record purposes.

INVESTIGATORS: M. B. Shaw and M. J. O'Leary.

PURPOSE: As a part of studies on the preservation of records, to find by papermaking experiments how the various kinds of fibers, sizing materials, filling materials, and coating materials usually employed, affect the qualities of book papers, particularly their strength and stability.

ACCOMPLISHMENTS: The work is divided into three phases, each to be reported separately when completed; these are: (1) effect of fiber components; (2) effect of sizing and filling materials; (3) effect of coating materials. The first phase has been completed and the results published. Papers were made from eight different fibrous raw materials, representative of the normal range of cellulosic purity and strength found in the commercial rag and wood fibers. Only clay filler and sufficient alum to clear the stock were added to the fibers; therefore, any deteriorative effect would be caused by fiber components only. In addition to the usual chemical and physical tests, the stability of the papers was measured by noting any loss of strength and change in alpha-, beta- and gamma-cellulose, pentosans, and copper number after heating. Although the values of all of these cellulosic characteristics varied widely, only the values of alpha-cellulose and copper number had a significant relation to the stability of the papers.

WORK IN PROGRESS: The second phase of this investigation is under way. Study is being made of the effect of variations in acidity, rosin content, and filling materials. The fillers comprise clay, titanium pigments, zinc pigments, and calcium carbonate.

SUPPORT: Government appropriations.

(6). PROJECT: The value of motion picture film as a record material.

INVESTIGATORS: C. G. Weber and J. R. Hill.

PURPOSE: The reproduction of records in miniature on cellulose acetate or "safety" film to preserve original records, or to make record material more readily accessible, is a rapidly growing practice. Many important original records are contained on the cellulose nitrate film—the ordinary theatre type. The contemplated work comprises studies to find: (1) the probable longevity of the film records; (2) optimum storage and use conditions affecting their preservation; and (3) optimal photographic and reading practice.

ACCOMPLISHMENTS: Samples of both types of films secured from all domestic manufacturers have been subjected to accelerated aging by heating under various humidity conditions at 100 deg. C. Both types were tested for any resultant deterioration by noting any loss in folding endurance or chemical breakdown. The chemical tests applied to both were acidity as pH, viscosity of acetone solution, and residual hypo. In addition, the acetate film was tested for copper number and acetyl value; and the nitrate film for extent of deterioration at 134.5 deg. C.—a test used for guncotton. The results indicate that acetate film is as stable as permanent record paper and that the nitrate film would decompose within a relatively short time. Furthermore, the former is no more inflammable than paper, while the nitrate film is very inflammable. Recommended storage and use conditions for realization of the potential longevity of both types of film base have been developed. The results were reported at a meeting of the American Library Association, at two meetings of the Society of Motion Picture Engineers, and are contained in publications.

WORK IN PROGRESS: Study is being made of the resistance of the emulsion of acetate films to deterioration by wear, light, and distortion, and any new types of films are studied for their quality in general, whenever they become available.

SUPPORT: Partial financial support has been given by the Carnegie Foundation, which allotted a research fund to the National Research Council, and by the Division of Motion Pictures and Sound Recordings, National Archives. Advisory assistance is given by a committee appointed by the National Research Council.

(7). PROJECT: To improve the test methods that are, or may be related to the stability of paper used for record purposes.

INVESTIGATORS: H. F. Launer and C. I. Pope.

PURPOSE: The present gravimetric methods for alpha-, beta-, and gamma-cellulose require a large sample and too much time. Furthermore, the values for beta- and gamma-cellulose are very inaccurate for wood fibers. Other investigators have shown that zinc sulphide fillers cause inaccurate results for alpha-cellulose, copper number, and pH. Also, that the present standard pH method and resin method give inaccurate results for all papers. There is no standard method available for pentosans. These questions are being studied.

ACCOMPLISHMENTS: A modified volumetric method for alpha-, beta-, and gamma-cellulose has been developed, which has excellent reproducibility, and requires only a 0.3 gram test specimen, no precision weighings, and only 1.5 to 2.5 hours actual working time for four determinations. A modification of the resin method has been found, which shortens the testing time considerably, and yields more accurate results. A proposed standard method for pentosans has been evolved. Reports of these studies will be published in the near future.

WORK IN PROGRESS: Investigation of the other items mentioned.

SUPPORT: Government appropriations.

Optics Division, Colorimetry Section

(1). PROJECT: The specification of light-scattering materials.

INVESTIGATOR: D. B. Judd.

PURPOSE: To check the Kubelka-Munk theory of scattering media as applied to paper. According to this theory, reflectance, thickness and opacity can be calculated from measurements of two of these properties. Such calculation is of value where an instrument is not available for obtaining a desired value, where the sample of paper is too small for a desired test, and as a guide for some of the papermaking practices used to obtain certain optical properties.

WORK IN PROGRESS: Four types of paper, newsprint, book, writing, and bond, representative of the normal range of reflectivity, were made in the Bureau mill. Each type was made in six different weights and thicknesses. These are being tested for weight, thickness, opacity, and reflectance. The degree to which scattering power is proportional to basis weight for each series, and the degree to which calculated reflectivity is constant independently of basis weight, and equal to the value determined by direct measurement, will determine how closely the Kubelka-Munk theory applies to paper.

GOVERNMENT PRINTING OFFICE

Washington, D. C.

(1). PROJECT: Determination of pH value and total acidity in paper.

INVESTIGATORS: S. F. Acree, M. S. Kantrowitz, R. H. Simmons, and S. Henderson.

PURPOSE: To study the factors influencing the determination of pH in finished paper and consider methods of extraction.

ACCOMPLISHMENTS: Two preliminary reports have been published.

WORK IN PROGRESS: Continued study of the problem, which has been in progress for five years.

SUPPORT: Government funds.

(2). PROJECT: Relative stability of bleached and unbleached sulphite papers as determined by natural aging.

INVESTIGATORS: M. S. Kantrowitz, R. H. Simmons, S. Henderson, and L. Price.

PURPOSE: To demonstrate the deteriorating effects of unbleached fibers in paper.

SUPPORT: Government funds.

(3). PROJECT: Evaluating the printing properties of paper.

INVESTIGATORS: M. S. Kantrowitz and R. H. Simmons.

PURPOSE: To develop methods for measuring such properties.

ACCOMPLISHMENTS: Reports made in cooperation with TAPPI.

SUPPORT: Government funds.

(4). PROJECT: Relationship between Gurley and Bekk smoothness testers.

INVESTIGATORS: M. S. Kantrowitz and R. H. Simmons.

SUPPORT: Government funds.

(To be continued)

Technical Men Meet at Watertown

The Northern New York members of the Technical Association met at Watertown, N. Y., June 5, with about 100 members and guests in attendance. Following a luncheon at the Jefferson Country Golf Club, the afternoon was spent by the men in golfing on the Club's links, or in trapshooting at the Watertown Skeet Club. Arrangements for entertaining the ladies included bridge and a river trip at Alexandria Bay.

Dinner and dancing at the Hotel Woodruff preceded a short business meeting at which the following officers were elected to serve for the coming year, 1937-38. Chairman, Prof. C. E. Libby, New York State College of Forestry, Syracuse, N. Y.; Vice Chairman, John H. Rich, Newton Falls Paper Company, Newton Folls, N. Y.; Secretary-Treasurer, F. G. Calkin, the Solvay Process Company, Syracuse, N. Y.

In preparation for later petitioning the national TAPI organization for a charter, a constitution for the new section, to be designated as the Empire State Section, was presented and adopted.

Concluding the day's program, B. D. Millidge, mill manager of the Howard Smith Paper Mills, Ltd., Corwall, Ont., spoke interestingly on the subject, "Human Relations" and Homer M. Rice presented the du Pont film "Wonder World of Chemistry."

Those attending this meeting were:

Mr. and Mrs. Ayles, Dexter Sulphite Company, Dexter, N. Y.; W. R. Benson, National Paper Products Company, Carthage, N. Y.; Mr. and Mrs. M. T. Bennett, Stebbins Engineering and Manufacturing Company, Watertown, N. Y.; Mr. and Mrs. Jas. Brennan, Dexter Sulphite Company, Dexter, N. Y.; F. G. Calkin, the Solvay Process Company, Syracuse, N. Y.; Mr. and Mrs. H. P. Cannon, the Upson Company, Lockport, N. Y.; J. F. Carroll, St. Regis Paper Company, Harrisville, N. Y.; Mrs. C. M. Chalmers, Syracuse, N. Y.; E. W. Clark, Knowlton Brothers, Watertown, N. Y.; Mr. and Mrs. H. D. Cook, Sweet Brothers Paper Manufacturing Company, Phoenix, N. Y.; Judge and Mrs. H. E. Cooke, Gardiner, Me.; R. E. Crawford, Bagley & Sewell Company, Watertown, N. Y.; F. J. Dooley, Racquette River Paper Company, Potsdam, N. Y.; Mr. and Mrs. H. W. Duggan, Stebbins Engineering and Manufacturing Company, Watertown, N. Y.; Mr. and Mrs. Earle, Papermakers Chemical Company, Albany, N. Y.; Mr. and Mrs. G. A. Engert, Dilts Machine Company, Fulton, N. Y.; Mr. and Mrs. R. H. Fisher, Dexter Sulphite Company Company, Dexter, N. Y.

Mr. and Mrs. D. J. Gilles, St. Regis Paper Company; Mr. and Mrs. F. C. Goodwill, St. Regis Paper Co.; Mr. and Mrs. E. W. Gutliph, Brownville Board Company, Brownville, N. Y.; Mrs. Jane N. Hall, Watertown, N. Y.; Roy F. Hayes, Bagley & Sewall Company, Watertown, N. Y.; M. H. Heddon, Racquette River Paper Company, Potsdam, N. Y.; F. A. Helin, Bagley & Sewall Company, Watertown, N. Y.; Mr. and Mrs. F. J. Hoar, Stebbins Engineering and Manufacturing Company, Watertown, N. Y.; O. F. Hutchinson, Dunton Pulp Company.; C. T. Jewell, Treadwell Supply Company; Mr. and Mrs. C. J. Johnson, Upson Company, Lockport, N. Y.; E. J. Johnstons, Lockport Felt Company, Newfane, N. Y.; H. R. Jones, Chemipulp Company, Watertown, N. Y.; A. P. Julin, Dexter Sulphite Company, Dexter, N. Y.; H. C. Kinnie, Bagley & Sewall Company, Watertown, N. Y.; Earl Knapp, Dexter Sulphite Company, Dexter, N. Y.;

Fred Laemmerman, Bagley & Sewall Company, Watertown, N. Y.; E. S. Lansing, Bagley & Sewall Company, Watertown, N. Y.; Mr. and Mrs. C. E. Libby, Carol Libby, Donna Jean Libby, N. Y. State College of Forestry, Syracuse; Allen A. Lowe, Sandy Hill Iron and Brass Works, Hudson Falls, N. Y.

M. J. Maguire, Hercules Powder Company, Lockport, N. Y.; Mr. and Mrs. B. D. Millidge, Howard Smith Paper Mills, Cornwall, Ont.; Mr. and Mrs. L. C. Nevin, Chemipulp Company, Watertown, N. Y.; Geo. Pennock, Bagley & Sewall Company, Watertown, N. Y.; W. J. O'Brien, O'Brien Steam Specialty Company, Syracuse; J. H. O'Connell, J. H. O'Connell Comany; Mrs. Olsen, G. E. Osterheldt, Krebs Pigment Company, Newark, N. J.; P. J. Ottersland, Carthage Machine Company; Mr. and Mrs. Homer Rice, DuPont Company, Watertown, N. Y.; Mr. and Mrs. J. H. Rich, Newton Falls Paper Company, Newton Falls, N. Y.; Mr. and Mrs. A. F. Richter, Stebbins Engineering and Manufacturing Company, Watertown, N. Y.; Mr. and Mrs. C. F. Richter, Stebbins Engineering and Manufacturing Company, Watertown, N. Y.; Ned Root, Dilts Machine Works, Inc., Fulton, N. Y.; Dr. Albert Salathe, Brown Company; J. F. Shuman, Atterbury Brothers; W. R. Steele, The Solvay Process Company, Syracuse, N. Y.; Mr. and Mrs. P. D. Switzer, Heller & Merz Company; C. E. Thompson, Bagley & Sewall Company, Watertown, N. Y.; E. T. Turnbull, Knowlton Brothers Company, Watertown, N. Y.; Chas. Wardwell, Carthage Machine Company; F. P. Wardwell, Carthage Machine Company; F. M. Williams, Williams Apparatus Company, Watertown, N. Y.; L. M. Woodside, Albany Felt Company; I. R. Wisner, Bagley and Sewall Company, Watertown, N. Y.; F. J. Yannes, Dilts Machine Works, Inc., Fulton, N. Y.; Frenerick Yannes, Dilts Machine Works, Inc., Fulton, N. Y.; Sheldon Young, National Paper Products, Company, Carthage, N. Y.

Kalamazoo Discusses Coated Paper

The June meeting of the Kalamazoo Valley Section of TAPPI was held at Watervliet, Mich. The sixty-five members attending enjoyed a mill trip and golf tournament at the Paw Paw Lake Country Club, through the courtesy of the Watervliet Paper Company.

Prizes for the Golf Tournament were won by Bill Kirkpatrick for the most fours, Jack Nyland for the most fives, and Herb Johnson for the most sixes.

Dinner was served at the Wigwam Hotel on beautiful Paw Paw Lake.

W. A. Kirkpatrick, technical director of Allied Paper Mills and formerly connected with the Coated Paper Division of S. D. Warren Company was the speaker of the evening. He discussed various methods of elevation of the raw materials which go to make up a Coated sheet and also methods of testing the finished sheet for characteristics desired in its ultimate use. He stressed particularly the need for correlation between laboratory test and mill operation with particular emphasis on the fact that a great many tests now used, merely give indications which are easily misinterpreted. He went on to say that a better understanding between the Technical men in the mill and the printers on individual items would result in great mutual advantage.

Mr. Kirkpatrick's talk is one of the few that have been given dealing directly with Coated Paper problems and it was well received. It will be printed in full at a later date.

The concluding items on the varied program were some beautiful and interesting moving pictures depicting our Western National Parks in full color and trout fishing by the gill netters on Lake Superior. Dean Pellet of Western States Teachers College, who made the remarkable shots gave an interesting commentary on the subject matter, during the showing.

Those attending the meeting were: Dean Pellett, Western States Teachers College, Kalamazoo, Mich.; W. F. Hathaway, John E. Bauman, Hugh C. Smith, L. H. La Liberte and James Williams, Kalamazoo Vegetable Parchment Company; Kalamazoo, Mich.; Arnold McAvery, Bradner Smith & Co., Chicago, Ill.; Paul deGuehery, Ray L. Barton, C. A. Braginton, A. E. Hays, Dwight Stocker, F. L. Brown, R. C. Von Mauer and M. S. Fogerty, Michigan Paper Comany, Plainwell, Mich.; H. S. Faram, L. J. Scheid, E. M. Smith, Walter Mossmann, Evans McWherter, Elbert G. Millham, Sevehen Bakh and P. G. Abbott, Watervliet Paper Company, Watervliet, Mich.; C. H. Olmstead, Grand Rapids American Box Board; W. R. Tobin, American Box Board; Arthur Weinland and Ralph Atkins, Lee Paper Company, Civkburg, Mich.; R. F. Irwin, H. R. Miller, Paul Easton, H. O. Ware, P. W. Bartholomew, R. T. Washburn, M. J. Loveland, W. J. Higbie, Robert R. Buss, F. K. Shankweiler, E. E. Murphy and Fred L. Chappell, Hercules Powder Company, Kalamazoo, Mich.; V. Heinmuller, Kenzie Phillips and Don Ritchie, American Cyanamid and Chemical Corporation, Kalamazoo, Mich.; Carl C. Schneider, Hawthorne Paper Company, Kalamazoo, Mich.; N. R. Pike, Nulomoline Company; Ray Olson, C. F. Somerville, Jr., and V. C. Mathis, Bryant Paper Company, Kalamazoo, Mich.; Claude Fletcher, S. H. Lindner, M. R. Wilkins and Leo A. Willoughby, Bryant Paper Company, Kalamazoo, Mich.; V. L. Shaw, Chicago, Ill.; H. B. Johnston, Joe Widmeyer and W. A. Kirkpatrick, Allied Paper Mills, Kalamazoo, Mich.; E. F. Whittington, Rex Paper Company, Kalamzoo, Mich.; Glen T. Ingling, Kalamazoo Paper Company; O. W. Callighan, Edgar Brothers Company, New York, N. Y.; M. F. Flotow and F. L. Zellers, French Paper Company, Niles, Mich.; Joe E. Dennany, Allied Paper Mills, Kalamazoo, Mich.; John J. Nylund, General Dyestuff Corporation, Chicago, Ill.; Paul G. Lundsend, Atlantic Coast Line R. R., Chicago, Ill.

TAPPI Lake States Elects Officers

At the May meeting of the Lake States Section of the Technical Association of the Pulp and Paper Industry, May 11, 1937, a nominating committee consisting of Dr. Otto Kress, chairman, A. Gardner, R. LeRoux presented the following nominations for the year 1937-1938:

Chairman, Mr. Howard Morgan, Institute of Paper Chemistry, Appleton, Wis.

Vice Chairman, Mr. E. H. Voigtman, Kimberly-Clark Corporation, Neenah, Wis.

Secretary-Treasurer, Mr. H. Christensen, Hoberg Paper Company, Green Bay, Wis.

Executive Committee, Mr. G. Enderlein, Mosinee Paper Mills Company, Mosinee, Wis. Mr. Dan Wicker, Thilmany Pulp and Paper Company, Kaukauna, Wis.

A motion was made, seconded and carried that the Secretary be instructed to cast a unanimous ballot in favor of the slate recommended by the nominating committee. Officers of the Section will, therefore, be as indicated.

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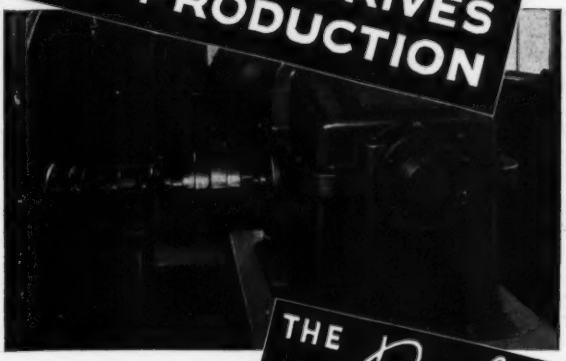

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NEW YORK IMPORTS

WEEK ENDING JUNE 12, 1937

SUMMARY

Cigarette paper .....1032 cs.
Wall paper .....19 bxs., 4 bls., 13 cs.
Paper hangings .....12 bls., 2 cs.
Newsprint .....2,524 rolls
Printing paper .....44 bls., 116 rolls, 190 cs.
Wrapping paper .....215 rolls, 33 bls., 84 cs.
Packing paper ..... 100 bls.
Drawing paper .....8 cs.
Filter paper .....29 cs.
Filter compound .....100 bls.
Surface coated paper .....115 cs., 23 crates
Metal coated paper .....34 cs.
Basic paper .....26 cs.
Photo paper .....2 cs.
Decalcomania paper .....19 cs. (duplex)
Decalcomanias .....24 cs.
Tissue paper .....21 cs.
Colored paper .....6 cs.
Wood pulp paper .....40 bls.
Paper tubes .....184 crtns., 19 cs.
Miscellaneous paper .....3,328 rolls, 95 cs., 81 bbls.

CIGARETTE PAPER

De Mauduit Paper Corp., *Manhattan,* Havre, 2 cs.
R. J. Reynolds Tobacco Co., *Manhattan,* Havre, 210 cs.
Champagne Paper Corp., *Manhattan,* Havre, 260 cs.
Champagne Paper Corp., *Champlain,* Havre, 560 cs.

WALL PAPER

S. K. Lonegren, *Drottningholm,* Gothenburg, 19 bxs.
F. J. Emmerich, *Samaria,* Liverpool, 2 bls.
——, *Manhattan,* Havre, 13 cs., 2 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., *Georgic,* London, 2 cs., 12 bls.

NEWSPRINT

Jay Madden Corp., *American Traveler,* Hamburg, 102 rolls.
Jay Madden Corp., *St. Louis,* Hamburg, 583 rolls.
International Paper Co., *G. T. D.,* Gatineau, 301 rolls.
Jay Madden Corp., *Manhattan,* Hamburg, 132 rolls.
Walker Goulard Plehn Co., *Scanpann,* Kotka, 155 rolls.
Lunham & Reeve, Inc., *Scanpenn,* Kotka, 398 rolls.
Jay Madden Corp., *Scanpenn,* Kotka, 171 rolls.
Jay Madden Corp., *Hansa,* Bremen, 275 rolls.
Jay Madden Corp., *Hansa,* Hamburg, 407 rolls.

PRINTING PAPER

——, *American Traveler,* Hamburg, 75 rolls.
——, *American Banker,* London, 41 rolls.
F. C. Strype, *Veendam,* Rotterdam, 114 cs.
L. A. Consmiller, *Bremen,* Bremen, 3 cs.
R. J. Saunders, *Queen Mary,* Southampton, 7 cs.
Jay Madden Corp., *Manhattan,* Hamburg, 44 bls.
Keller Dorian Paper Co., *Exochorda,* Marseilles, 23 cs.
Steiner Paper Corp., *Hansa,* Bremen, 29 cs.
E. Dietzgen & Co., *Cape Corso,* Marseilles, 7 cs.
C. Bruning Co., *Cape Corso,* Marseilles, 7 cs.

WRAPPING PAPER

Guaranty Trust Co., *Drottningholm,* Gothenburg, 215 rolls.
Wilkinson Grey & Co., *Drottningholm,* Gothenburg, 58 cs.
Steiner Paper Corp., *Hansa,* Hamburg, 5 cs.
E. Dietzgen & Co., *Hansa,* Hamburg, 21 cs.
Heemsoth Kerner Corp., *Hansa,* Bremen, 33 bls.

PACKING PAPER

J. P. Heffernan Paper Co., *Exochorda,* Genoa, 100 bls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., *Georgic,* London, 8 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., *Georgic,* London, 23 cs.
E. H. Sargent & Co., *Drottningholm,* Gothenburg, 6 cs.

FILTER COMPOUND

——, *Hansa,* Hamburg, 100 bls.

SURFACE COATED PAPER

Gevaert Co. of America, *Pennland,* Antwerp, 104 cs.
Globe Shipping Co., *Hansa,* Bremen, 11 cs., 23 crates.

METAL COATED PAPER

Taub Hummell & Schnall, *Bremen,* Bremen, 7 cs.
K. Pauli Co., *Hansa,* Bremen, 27 cs.

BASIC PAPER

Globe Shipping Co., *Hansa,* Bremen, 26 cs.

PHOTO PAPER

Medo Photo-Supply Co., *Georgic,* London, 2 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Samaria,* Liverpool, 19 cs. (duplex).

DECALCOMANIAS

Sellers Transportation Co., *Bremen,* Bremen, 22 cs.
Phoenix Shipping Co., *Bremen,* Bremen, 2 cs.

TISSUE PAPER

B. F. Drakenfeld & Co., *Samaria,* Liverpool, 4 cs.
Atlantic F'd'g Co., *Hansa,* Hamburg, 17 cs.

COLORED PAPER

D. C. Andrews & Co., *Bremen,* Bremen, 1 cs.
International F'd'g Co., *Hansa,* Hamburg, 5 cs.

WOOD PULP PAPER

A. Giese & Son, *Veendam,* Rotterdam, 40 bls.

PAPER TUBES

——, *Hansa,* Bremen, 184 crtns., 19 cs.

MISCELLANEOUS PAPER

T. N. Fairbanks Co., *Tai Ping Yang,* Yokohama, 39 cs.
The Borregaard Co., Inc., *Drottningholm,* Gothenburg, 150 rolls.
——, *St. Louis,* Hamburg, 3178 rolls.
Japan Paper Co., *Montreal Maru,* Kobe, 24 cs.
Moller Products Corp., *Montreal Maru,* Yokohama, 20 cs.
Jay Madden Corp., *Scanpenn,* Helsingfors, 81 bbls., 1 cs.
Coty Processing Co., *Champlain,* Havre, 11 cs.

RAGS, BAGGINGS, ETC.

——, *Tai Ping Yang,* Kobe, 84 bls. linen waste.
W. Steck & Co., *Tai Ping Yang,* Kobe, 33 bls. cotton waste.
Royal Manfg. Co., *Tai Ping Yang,* Kobe, 30 bls. rags.
Darmstadt Scott & Courtney, *Tai Ping Yang,* Kobe, 61 bls. fleshings.
——, *Tai Ping Yang, Kobe,* 52 bls. hemp waste, 77 bls. rags.
S. Shapiro & Sons, Inc., *Batory,* Gdynia, 74 bls. rags.
J. J. Ryan & Son, *Tai Ping Yang,* Kobe, 100 bls. cotton waste.
J. Cohen & Sons Co., Inc, *American Banker,* London, 31 bls. rags.
——, *American Banker,* London, 50 bls. rags, 28 bls. old strings, 18 bls. paper stock.
——, *Veendam,* Rotterdam, 17 bls. rags.
Chase National Bank, *Pennland,* Antwerp, 173 bls. jute waste.
Castle & Overton, Inc., *Pennland,* Antwerp, 45 bls. jute cuttings.
D. M. Hicks, Inc., *Pennland,* Antwerp, 111 bls. flax pulp.
J. Cohen & Sons Co., Inc., *Samaria,* Liverpool, 15 bls. rags.
Manufacturers Trust Co., *Bayard,* London, 19 bls. rags.
W. Steck & Co., *Bayard,* London, 69 bls. old strings.
G. A. Henshaw & Son, *Bayard,* London, 93 bls. paper stock.
T. D. Downing & Co., *Bayard,* Glasgow, 13 bls. rags.
Van Oppen & Co., *Black Gull,* Rotterdam, 65 bls. paper stock.

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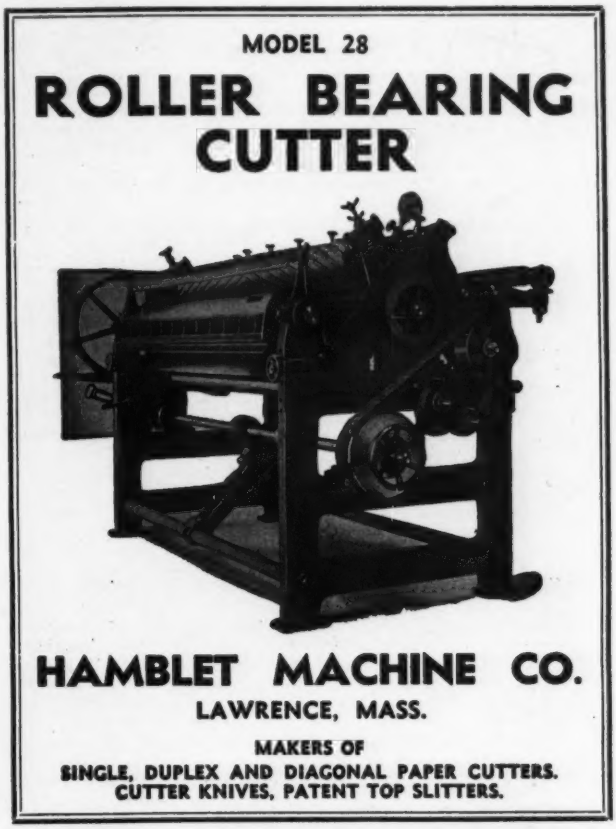
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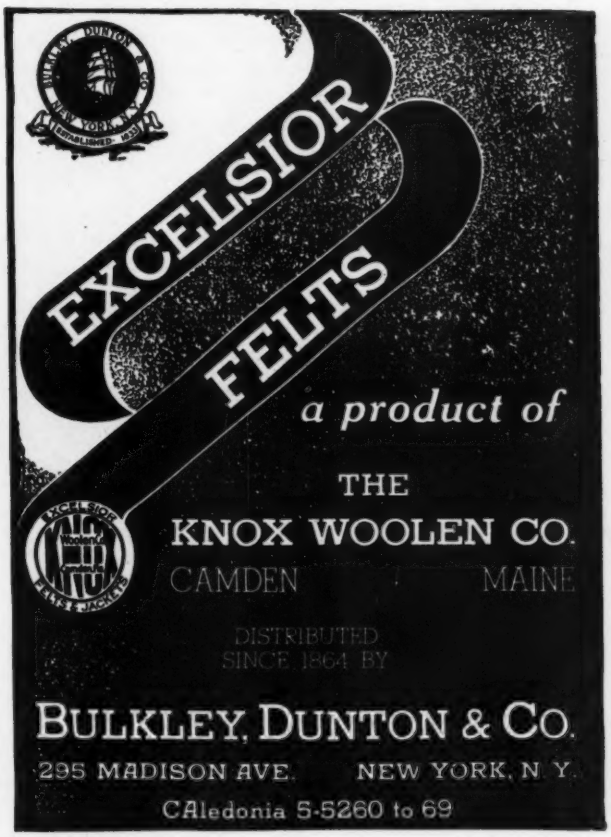
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D. Benedetto, Inc., *Black Gull,* Rotterdam, 210 bls. dark cottons.
R. Blank, *Black Gull,* Rotterdam, 56 bls. old fustians.
Darmstadt Scott & Courtney, *Black Gull,* Antwerp, 270 bls. jute waste.
A. H. Searle, *Black Gull,* Antwerp, 75 bls. rags.
Royal Manfg. Co., *Black Gull,* Antwerp, 12 bls. cotton waste.
R. Blank, *Exminster,* Alexandria, 180 bls. bagging, 302 bls. old cottons, 116 bls. rags.
R. J. Ross & Co., Inc., *Exminster,* Alexandria, 153 bls. rags, 350 bls. bagging.
Castle & Overton, Inc., *Exminster,* Alexandria, 407 bls. bagging, 470 bls. rags.
W. Steck & Co., *Exminster,* Alexandria, 44 bls. bagging, 123 bls. rags.
———, *Exminster,* Alexandria, 831 bls. rags.
E. J. Keller Co., Inc., *Exminster,* ———, 616 bls. paper stock, 318 bls. bagging.
Linter Supply Co., *Montreal Maru,* Shanghai, 150 bls. cotton waste.
Michigan Felt Works, *Montreal Maru,* Shanghai, 100 bls. cotton waste.
New England Waste Co., *Montreal Maru,* Shanghai, 200 bls. cotton waste.
Williamson Products Co., *Montreal Maru,* Shanghai, 100 bls. cotton waste.
Railway Supply & Manfg. Co., *Montreal Maru,* Shanghai, 140 bls. cotton waste.
New England Waste Co., *Montreal Maru,* Kobe, 240 bls. cotton waste.
C. Comiter Co., *Montreal Maru,* Kobe, 50 bls. rags.
Royal Manfg. Co., *Montreal Maru,* Kobe, 20 bls. rags.
Castle & Overton, Inc., *Exochorda,* Alexandria, 229 bls. rags.
———, *Exochorda,* Alexandria, 336 bls. rags, 103 bls. bagging.
D. Benedetto, Inc., *Exochorda,* Alexandria, 119 bls. bagging.
R. J. Ross & Co., Inc., *Exochorda,* Alexandria, 83 bls. bagging.
R. Blank, *Exochorda,* Alexandria, 76 bls. old cottons.
J. Cohen & Sons Co., Inc., *Quaker City,* Dundee, 4 bls. paper stock.
E. J. Keller Co., Inc., *Quaker City,* Dundee, 109 bls. paper stock.
E. J. Keller Co., Inc., *Mangalore,* ———, 50 bls. paper stock.
E. J. Keller Co., Inc., *Kano Maru,* ———, 200 bls bagging
E. J. Keller Co., Inc., *G. Maersk,* ———, 50 bls. paper stock.

HIDE CUTTINGS

American Express Co., *Samaria,* Liverpool, 770 bags hide cuttings.

OLD ROPE

Chase National Bank, *American Banker,* London, 49 coils.
———, *American Banker,* London, 14 coils.
Banco Coml Italiane Trust Co., *Bayard,* London, 70 bls.
1st National Bank of Boston, *Bayard,* London, 96 bls.
Great Eastern Packing & Paperstock Corp., *Bayard,* Glasgow, 63 bls., 70 coils.
W. Steck & Co., *Kelso,* Hull, 43 coils.
D. Benedetto, Inc., *Cape Corso,* Marseilles, 77 rolls.

CASEIN

———, *Champlain,* Havre, 150 bags.

WOOD PULP

Castle & Overton, Inc., *American Traveler,* Hamburg, 1720 bls. wood pulp.
Perkins Goodwin & Co., *Batory,* Gdynia, 1800 bls. wood pulp, 277 tons.
Price & Pierce, Ltd., *Drottningholm,* Gothenburg, 257 bls. unbleached sulphite.
Gottesman & Co., Inc., *Drottningholm,* Gothenburg, 1200 bls. sulphate.
Bank of N. Y. Trust Co., *St. Louis,* Hamburg, 4000 bls. wood pulp, 800 tons.
Castle & Overton, Inc., *Scanpenn,* Wiborg, 753 bls. wood pulp, 150 tons.
Lagerloef Trading Co., *Scanpenn,* Wiborg, 1420 bls. sulphite, 260 tons; 156 bls. sulphate, 26 tons.
Lagerloef Trading Co., *Scanpenn,* Kotka, 350 bls. sulphite, 59 tons; 480 bls. sulphate, 80 tons.
Castle & Overton, Inc., *Hansa,* Hamburg, 1155 bls. wood pulp, 231 tons.
M. Sone, *New York,* Hamburg, 199 bls. wood pulp.

WOOD PULP BOARDS

H. Fuchs & Son, *Drottningholm,* Gothenburg, 35 crates.
———, *Manhattan,* Hamburg, 41 cases.
———, *Scanpenn,* Wiborg, 511 rolls.
Jay Madden Corp., *Scanpenn,* Wiborg, 351 bls.
Jay Madden Corp., *Scanpenn,* Kotka, 102 bls.

NEWARK IMPORTS

WEEK ENDING JUNE 12, 1937

H. G. Craig Co., *Kermic,* Donnacona, 300 rolls newsprint.
H. G. Craig Co., *Newscarrier,* Donnacona, 329 rolls newsprint.

ALBANY IMPORTS

WEEK ENDING JUNE 12, 1937

Price & Pierce, Ltd., *Maine,* Hernosand, 1200 bls. unbleached sulphate.
———, *Maine* Hernosand, 1500 bls. sulphite, 6300 bls. kraft pulp.
Bank of N. Y. Trust Co., *Maine,* Hernosand, 300 bls. kraft pulp.
———, *Maine,* Iggesund, 1950 bls. sulphite, 325 tons.
———, *Maine,* Iggesund, 600 bls. sulphite, 75 tons.
National City Bank, *Maine,* Iggesund, 1900 bls. sulphite, 300 tons.
———, *Maine,* Iggesund, 3750 bls. sulphite, 750 tons.
International Paper Co., *Frank Seamans,* Newcastle, N. B., 3000 cords pulpwood.

BOSTON IMPORTS

WEEK ENDING JUNE 12, 1937

Royal Manfg. Co., *G. Maersk,* Shanghai, 100 bls. cotton waste.
———, *G. Maersk,* Shanghai, 600 bls. rags.
Royal Manfg. Co., *Montreal Maru,* Shanghai, 100 bls. cotton waste.
Q. Smith & Sons Co., *Montreal Maru,* Shanghai, 100 lbs. cotton waste.
Beacon Wiper Supply Co., *Montreal Maru,* Kobe, 75 bls. rags.
Price & Pierce, Ltd., *Belos,* ———, 1650 bls. unbleached sulphate; 250 bls. unbleached mechanical pulp; 3570 bls. unbleached sulphite.
Pagel Horton & Co., Inc., *Belos,* Sweden, 1222 bls. wood pulp.
Parsons & Whittemore, Inc., *Frankfort,* ———, 1100 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING JUNE 12, 1937

Price & Pierce, Ltd., *Etna,* ———, 4200 bls. unbleached sulphate, 2700 bls. unbleached sulphite.
Pagel Horton & Co., Inc., *Etna,* Sweden, 12,500 bls. wood pulp.
M. Sone, *Birmania,* Trieste, 1768 bls. wood pulp.

WILMINGTON IMPORTS

WEEK ENDING JUNE 12, 1937

Lagerloef Trading Co., *Scanpenn,* Helsingfors, 2914 bls. sulphite, 495 tons.
Jay Madden Corp., *Scanpenn,* Kotka, 135 rolls newsprint.

PHILADELPHIA IMPORTS

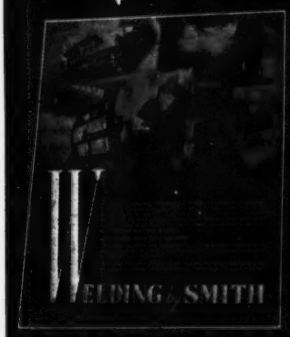
WEEK ENDING JUNE 12, 1937

Brandwein Mazur Co., *G. Maersk,* Shanghai, 50 bls. cotton waste.
Glant Co., *G. Maersk,* Kobe, 40 bls. rags.
———, *G. Maersk,* Kobe, 50 bls. rags.
———, *G. Maersk,* Yokohama, 317 bls. rags.
F. Weber Co., *Bayard,* London, 4 cs. drawing paper.
———, *Bayard,* London, 130 coils old rope.
R. Wilson Paper Corp., *Bayard,* Glasgow, 16 rolls paper.
E. J. Keller Co., Inc., *Black Gull,* ———, 115 bls. bagging, 211 bls. paper stock.
Philadelphia National Bank, *Black Gull,* Rotterdam, 29 bls. rags.
Castle & Overton, Inc., *Black Gull,* Rotterdam, 80 bls. rags.
———, *Black Gull,* Antwerp, 154 bls. rags.
———, *Exminster,* Alexandria, 145 bls. rags.
Boger Cotton Products Co., *Montreal Maru,* Shanghai, 125 bls. cotton waste.
J. M. Hagy Waste Works, *Montreal Maru,* Kobe, 40 bls. rags.
National Wiping Cloth Co., *Montreal Maru,* Kobe, 60 bls. rags.
Lagerloef Trading Co., *Scanpenn,* Wiborg, 1778 bls. sulphite, 345 tons.
Jay Madden Corp., *Scanpenn,* Kotka, 578 rolls newsprint.
Wilkinson Bros. & Co., Inc., *Scanpenn,* Kotka, 61 rolls newsprint.
F. Whitaker Co., *Scanpenn,* Copenhagen, 87 bls. rags.
———, *Quaker City,* London, 42 bls. thread waste.
J. T. Flannery, *Excello,* Casablanca, 98 bls. rags.

(Continued on page 62)

Send for this Welding Bulletin

IF you have large pieces to be welded, get this Bulletin at once. It explains our accomplishments in successfully doing some extremely difficult and big welding jobs—a Service that is available to you on a very attractive basis!



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IF IT'S A JOB OF MOVING AIR THERE'S A
PROPELLAIR TO DO IT

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, June 16, 1937.

Conditions in the local paper industry were moderately active during the past week, as usual at this time of the year. The contract movement, however, is normal. Sales forces of the leading paper organizations continue optimistic. Prices are generally holding to formerly quoted levels.

The newsprint paper industry continues to expand. Manufacturing operations in the United States, Canada and Newfoundland are being speeded up to take care of current consumption. Shipments are proceeding in good volume.

Trading in the fine paper market is moderately active. Demand for pulp, cover, bond and ledger papers is very well maintained. Tissues are going forward freely. The coarse paper market is strong and kraft specialties are going forward freely. Paper board and other specialties are moving in good volume.

Mechanical Pulp

The ground wood pulp market continues steady. Production in the United States, Canada and abroad is keyed to consumption as far as possible in order to meet current requirements. Contract shipments are moving as rapidly as possible. Pulp prices are steady.

Chemical Pulp

Demand for various varieties of chemical pulp is quite average. Request for bleached sulphite pulp is persistent. Recent advanced quotations on several of the grades are maintained, especially for bleached kraft and bleached soda.

Old Rope and Bagging

The old rope market is slightly softer. Demand for domestic and imported old manila rope is regular. Small mixed rope is moving slowly. The bagging market is irregular. Demand for both domestic and imported gunny and scrap bagging is less busy.

Rags

Listlessness prevails in the domestic rag market. The demand for old rags has fallen off slightly and with the exception of unbleached white cuttings, is rather irregular. Roofing grades are only moderately active.

Waste Paper

The better grades of paper stock are very well maintained. Demand from the mills for shavings is persistent, especially for white envelope cuttings, ordinary hard white No's. 1 and 2 and soft white No. 1. Book stock continues fairly steady and old kraft is softer.

Twine

Offerings for twine are fairly satisfactory. Some of the varieties are in particularly good request at present. Keen competition is due to the fact that prices are being held down, although the outlook for the future is fairly promising in the opinion of most observers.

IMPORTS OF PAPER AND PAPER STOCK

(Continued from page 60)

Price & Pierce, Ltd., *Argosy*, ——, 1836 bls. unbleached sulphate.
Gottesman & Co., Inc., *Blankaholm*, Sweden, 3500 bls. wood pulp.
M. Sone, *Frankfurt*, Hamburg, 1100 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JUNE 12, 1937

J. J. Ryan & Sons, Inc., *Montreal Maru*, Kobe, 100 bls. cotton waste.
Irving Trust Co., *Quaker City*, London, 40 bls. waste paper.
Parsons & Whittemore, Inc., *City of Newport News*, ——, 1696 bls. wood pulp.
Gottesman & Co., Inc., *Georgia*, Sweden, 1250 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING JUNE 12, 1937

Price & Pierce, Ltd., *Georgia*, ——, 3720 bls. unbleached sulphite.
Gottesman & Co., Inc., *Georgia*, Sweden, 3500 bls. wood pulp.
Pagel Horton & Co., Inc., *Georgia*, Sweden, 3000 bls. wood pulp.
M. Sone, *City of Baltimore*, Hamburg, 249 bls. wood pulp.
M. Sone, *City of Hamburg*, Hamburg, 498 bls. wood pulp.

GALVESTON IMPORTS

WEEK ENDING JUNE 12, 1937

Burka Bagging Co., Inc., *Montreal Maru*, Kobe, 230 bls. bagging.

NEW ORLEANS IMPORTS

WEEK ENDING JUNE 12, 1937

Pagel Horton & Co., Inc., *Trolleholm*, Sweden, 2500 bls. wood pulp.

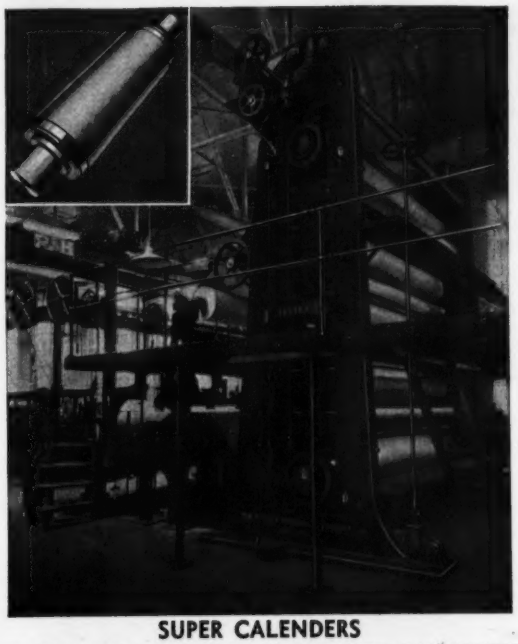
MONTREAL IMPORTS

WEEK ENDING JUNE 12, 1937

Gottesman & Co., Inc., *Bennestavet*, Sweden, 5400 bls. wood pulp.
Gottesman & Co., Inc., *Rio Verde*, Sweden, 1800 bls. wood pulp.
M. Sone, *Norefjord*, Sundsvall, 3600 bls. wood pulp.

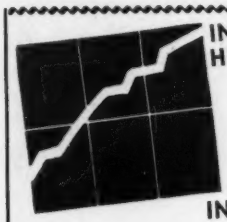
Demand for British Paper Equipment

Henry Balfour & Co., Ltd., Leven, has shipped equipment for a pulp-mill evaporating plant to Russia, valued at £100,000. The Harland Engineering Company, Ltd., Alloa, Scotland, has obtained an order from the Titaghur Paper Mills Company, Ltd., India, for electric drive equipment. The same firm will supply the electric drive for two 262-inch paper mills owned by the Ontario Paper Company, Ltd.



SUPER CALENDERS
FRICTION CALENDERS—EMBOSSING CALENDERS
COTTON & PAPER ROLLS—NEW & REFILLED

The Textile-Finishing Machinery Co.
New York Office
50 Church St.
Southern Office
Johnston Bldg., Charlotte, N. C.
Providence, R. I.



IN HIGH INSURANCE RATES . . .

IN COMPENSATION COSTS, LOSS OF SERVICES, SHATTERED MORALE . . .

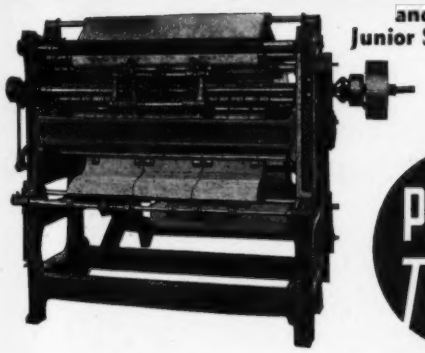
You Pay for NEVERSLIP Protection

Get it!

Actual cash savings plus the inestimable value of conservation of man power soon pay for the cost of installing NEVERSLIP Rolled Steel Floor Plate on hazardous areas. It pays for itself and *then pays you* . . . for the "perfect diamond pattern" reduces accidents, gives a safe, non-skid surface for foot or wheel. (And, trucks roll easily; it cleans and drains perfectly, too.)

AMERICAN PRESSED STEEL COMPANY
Commercial Trust Bldg., Philadelphia, Pa.

FOR FOLDING STANDARD SIZE and Junior Sizes PAPER TOWELS



full rotary-ball bearing interfolder

Simply constructed, the upkeep of this machine is next to nothing, although the guaranteed production is 25 cases per hour. Illustrated here is the standard three wide towel interfolder, but this machine can also be built so that it is one, two, three, four or five wide with production of 12 cases for single width up to approximately 40 cases on the five wide machine. Towels are slit to their proper size with a score cut slitter running on a hardened surface roll, which gives the ends a smooth shearlike cut. The cut-off mechanism is a full rotary mechanism making a saw tooth cut.

Complete details upon request.

Paper Converting Machine Co., Green Bay, Wis.

Designers and manufacturers of High Speed Rotary Folders for napkins, towels and toilet paper; Rotary printing presses for napkins, bags, envelopes; Creping Machines, bundling presses and special converting machinery.

MOVING

The demand for Appleton Calender Rolls has increased so rapidly that greater manufacturing space has become a necessity. Our roll department has moved to a separate building providing ample facilities for maintaining the service and the quality of Appleton Calender Rolls that customers appreciate.

APPLETON CALENDER · ROLLS ·

THE APPLETON MACHINE COMPANY · Appleton, Wisconsin

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, June 16, 1937.

BLANC FIXE.—The blanc fixe market continues irregular. Prices are generally holding to formerly quoted levels. The pulp is quoted at from $42.50 to $45 per ton in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Conditions in the bleaching powder market are improving slightly. The contract movement is normal and prices are generally maintained at former levels. Bleaching powder is offered at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN.—The casein market rules somewhat steadier. Domestic standard ground casein is now quoted at from 13 to 14 cents per pound; while domestic finely ground casein is selling at from 13½ to 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Trading in the local caustic soda market is fairly satisfactory. Contract shipments are normal. Solid caustic soda is quoted at from $2.55 to $2.60; while the flake and ground are selling at from $2.85 to $3 per 100 pounds, in drums, at works.

CHINA CLAY.—The china clay market is experiencing a strong undertone. Contract shipments are moving freely. Imported china clay is quoted at from $15 to $21 per ton, ship side; while domestic paper making clay is selling at from $6.50 to $12 per ton, at works.

CHLORINE.—Business in the chlorine market is holding up and the contract movement is about normal. Prices are generally maintained at formerly quoted levels. Chlorine is quoted at from $2.15 to $2.25 per 100 pounds, in tank cars, at works.

ROSIN.—The rosin market is little changed. Paper making gum rosin is now quoted at $8.15 and wood rosin at $8.20 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $3.68 per 100 pounds, in tank cars, at works.

SALT CAKE.—Demand for salt cake is still persistent. Prices are steady to firm. Salt cake is quoted at from $12 to $13; chrome salt cake at from $11 to $12 per ton, at works; while imported salt cake is selling at from $12 to $13 per ton, ship side.

SODA ASH.—The soda ash market is fairly active. Demand from the paper mills is moderately insistent. Prices are well maintained. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH.—Paper mill demand for starch is normal and the contract movement is regular. Prices are now steady and unchanged. Special paper making starch is quoted at $4 per 100 pounds, in bags; and at $4.27 per 100 pounds, in barrels, at works.

SULPHITE OF ALUMINA.—The sulphite of alumina market is stronger. Contract shipments are moving in good volume. Commercial grades are quoted at from $1.25 to $1.60; while iron free is selling at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is steadier. Yearly contracts are quoted at $18 per long ton on orders of 1,000 tons, or over and $20 on smaller quantities. On spot and nearby car loads the quotations are $21 per ton. All quotations are in car lots, at works.

TALC.—Offerings of talc are moving into consumption in moderate volume. In most instances prices are holding to schedule. Domestic talc is quoted at from $15 to $18 per ton, eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

Tissues—Per Ream—			
White No. 1	.95	@	—
White No. 1 M. G.	.92½	@	—
White No. 1½	.67½	@	—
White No. 2	.62½	@	—
Anti-Tarnish M. G.	.75	@	—
Colored	.87½	@	—
Kraft	.75	@	—
Manila	.62½	@	—
Unbleached Toilet	2.60	@	3.30
Bleached Toilet	3.94	@	5.26
Paper Towels—			
Unbleached	2.10	@	3.35
Bleached	3.30	@	3.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
(Delivered New York)			
News, per ton—			
Roll, contract	42.50	@	—
Sheets	47.50	@	—
Kraft—			
No. 1 Northern	5.25	@	5.75
Standard	5.00	@	—
Southern	5.00	@	—
Glazed	4.50	@	—
Striped	4.75	@	—
Boards, per ton—			
News	47.50	@	50.00
Chip	45.00	@	47.50
Sgl. Mla. Ll. Chip	55.00	@	60.00
Jute Lined Chip	55.00	@	60.00
Kraft Liners	65.00	@	67.50
White Pat. Coated	67.50	@	70.00
Binders Boards	70.00	@	75.00

The following are representative of distributors' resale prices:—

Rag Content Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$41.40@$48.50	$42.55@$50.00
100% Rag	32.80@ 38.50	33.95@ 39.75
85% Rag	.....	32.20@ 37.75
75% Rag	24.75@ 29.00	25.90@ 30.50
65% Rag	21.65@ 26.25	22.80@ 27.75
50% Rag	18.70@ 22.75	19.90@ 24.25
25% Rag	15.80@ 19.25	16.95@ 20.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra

Sulphite Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$9.35@$11.50	$10.55@$12.75
No. 2	8.50@ 10.25	9.65@ 11.75
No. 4	7.60@ 9.25	8.80@ 10.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra.

Free Sheet Book Papers—
White, Cased Paper,
Delivered in Zone 1:

No. 1 Glossy Coated	$12.45@$14.25
No. 2 Glossy Coated	10.80@ 12.25
No. 3 Glossy Coated	9.65@ 11.00
No. 4 Glossy Coated	9.05@ 10.50
No. 1 Antique (watermarked)	9.05@ 10.50
No. 2 Offset	8.35@ 9.50
A Grade E. F.	8.20@ 9.50
A Grade S. & S. C.	8.45@ 9.75
B Grade E. F.	7.60@ 8.75
B Grade S. & S. C.	7.85@ 9.00
C Grade E. F.	7.30@ 8.50
C Grade S. & S. C.	7.55@ 8.75
D Grade E. F.	7.00@ 8.25
D Grade S. & S. C.	7.25@ 8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	33.00	@	36.00
Dry	40.00	@	42.00
(Delivered)			
No. 1 Domestic and Canadian	33.00	@	36.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.25	@	4.65
Prime Qualities—			
Easy-Bleaching Sulphite	3.50	@	3.75
Strong Unbleached Sulphite	3.40	@	3.65
(On Dock, Atlantic Ports)			
Kraft Bleached	4.00	@	4.50
Kraft Light & Strong	2.75	@	3.75
Kraft No. 1	2.60	@	3.50
Kraft No. 2	2.50	@	2.75
(F.o.b. Pulp Mill)			
Kraft Domestic	2.50	@	3.25
(Delivered)			
Soda Bleached	3.15	@	—

Add 60 cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	9.00	@	9.25
Silesias, No. 1	6.75	@	7.00
New Unbleached	9.25	@	9.50
Blue Overall	7.50	@	8.00
Fancy	3.34	@	4.25
Washables	3.00	@	3.50
Mixed Khaki Cuttings	4.25	@	4.50
O. D. Khaki Cuttings	4.75	@	5.00

Old Rags

White, No. 1—			
Repacked	3.50	@	3.75
Miscellaneous	3.00	@	3.25
White, No. 2—			
Repacked	2.50	@	2.75
Miscellaneous	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.90	@	2.00
Roofing Rags—			
No. 1	Nominal		
No. 2	1.10	@	1.20
No. 3 (bagging)	1.00	@	1.10
No. 4	1.00	@	1.10
No. 5A	.80	@	.90

Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.50
New Mixed Cuttings	2.00	@	2.25
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.50
New Light Oxfords	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00

CAUTION!

TO THE TRADE AND TO ALL MANUFACTURERS AND USERS OF

REVERSE ROLL COATING MACHINES

THAT ARE NOT MANUFACTURED UNDER EXCLUSIVE PATENTS OWNED OR LICENSED BY THE JOHN WALDRON CORPORATION.

WE HEREBY CAUTION MANUFACTURERS AND USERS OF SUCH MACHINES OF POSSIBLE LEGAL PROCEEDINGS BEING INSTITUTED BY US AGAINST THEM.

JOHN WALDRON CORP.

New Brunswick • New Jersey

POTDEVIN

Aniline Printing
Self-Opening Square Paper Bag Machine

For over 40 years our customers' desires have been our guide. We have worked hand in hand, ever seeking a better method, a finer job.

Numerous new machines, new combinations, many improvements, have resulted from this coalition.

Thus, today, whether in the building of bag machines, printing presses, waxing machines, or other paper converting units, the name POTDEVIN stands out as leader.

PAPER BAG MCHY., PRINTING PRESSES, WAXERS, VARNISHERS, GLUERS, SPECIAL MCHY.

POTDEVIN MACHINE CO.

1223 38th St. Brooklyn, N. Y.
Est. 1893 Tel. Windsor 6-1700

Mundt

Perforated Screens For Pulp and Paper Mills

Steel, Copper, Brass
Bronze, Monel Metal
and Other Alloys
Punched for Centrifugal
and Rotary Screens,
Pulp Washers, Drainer
Bottoms, Filter Plates, etc.

Charles Mundt & Sons
63 Fairmount Ave. Jersey City, N. J.

SLIP THIS AD IN YOUR POCKET

★

Tie a string around your finger, make a note in your notebook, or slip this ad in your pocket as a reminder to see the Heller & Merz representatives in Springfield. They're full of new ideas on how they can help you during the coming year. See you at Springfield!

Heller & Merz

DIVISION OF THE CALCO CHEMICAL CO., INC.
90 West Street, New York, N. Y.
A DIVISION OF AMERICAN CYANAMID COMPANY
BOSTON—35 Hartford St. • CHICAGO—146 W. Kinzie St.
SPRINGFIELD, MASS.—40 Albert St.
PHILADELPHIA —401 No. Broad St.
Factories: BOUND BROOK, N. J. and NEWARK, N. J.

No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	2.25	@	2.50
French Blue Linens	3.50	@	4.00
German Blue Linens	2.50	@	2.75
German Blue Cottons	2.00	@	2.25
Checks and Blues	2.00	@	2.25
Linsey Garments	2.25	@	2.35
Dark Cottons	2.15	@	2.25
Old Shopperies	1.75	@	2.00
New Shopperies	1.75	@	2.00
French Blues	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.25	@	2.35
Domestic	2.15	@	2.25
Wool Tares, light	1.75	@	1.85
Wool Tares, heavy	2.20	@	2.35
Bright Bagging	1.70	@	1.75
Manila Rope—			
Foreign	5.00	@	5.25
Domestic	5.25	@	5.50
Jute Strings	2.75	@	3.00
Sisal Strings	2.60	@	2.75
Mixed Strings	Nominal		

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.15	@	3.35
Ordinary Hard White No. 1	2.50	@	2.60
Hard White No. 2	2.40	@	2.50
Soft White No. 1	2.40	@	2.50
Flat Stock—			
Stitchless	1.40	@	1.50
Overissue Mag	1.40	@	1.50
Solid Flat Book	1.30	@	1.45
Crumbled No. 1	1.15	@	1.20
Ledger Stock	1.30	@	1.35
New B. B. Chips	.65	@	.70
Manila—			
New Env. Cut	2.25	@	2.35
New Cuttings	1.90	@	2.10
Old Kraft Machine—			
Compressed bales	1.70	@	1.80
News—			
No. 1 White News	1.50	@	1.60
Strictly Overissue	.90	@	1.00
Strictly Folded	.60	@	.70
No. 1 Mixed Paper	.50	@	.60

Twines

(F. o. b. Mill)

(Soft Fibre)			
Coarse Polished—			
India	.16	@	.18½
Belg. White Hemp	.17	@	.20½
India Compress	.16½	@	.17
Fine Polished—			
Fine India	.22	@	.24
Unpolished—			
Box	.11¾	@	.12¼
Paper Makers	.11½	@	.13¾
Tube Rope	.12½	@	.15¼
Wall Paper	.13½	@	.14¾
Wrapping	.17	@	.21
Soft Fiber Rope	.14¾	@	.15¼
(Hard Fibre)			
Bond	.13½	@	.14
Anchor	.13	@	.14
Manila	.21	@	.28

Domestic	4.75	@	5.00
Transmission Rope	2.00	@	2.25
Jute Rope	2.00	@	2.25
Soft Jute Strings	2.00	@	2.50
Jute Carpet Threads	1.75	@	2.00
Gunny No. 1			
Foreign	2.40	@	2.50
Domestic	1.90	@	2.00
Bleachery Burlap	4.00	@	4.25
Scrap Burlap—			
Foreign	2.15	@	2.25
Domestic	1.90	@	2.10
Scrap Sisal	2.25	@	2.50
Scrap Sisal for Shredding	2.25	@	2.75
Wool Tares, heavy	2.30	@	2.40
New Burlap Cuttings	2.45	@	3.00
Aust. wool pouches	3.00	@	3.25
Heavy Baling Bagging	2.40	@	2.60
Paper Mill Bagging	1.75	@	1.80
Bagging No. 2	1.00	@	1.10

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04	@	.04¼
New White No. 1	.09	@	.09¼
New White No. 2	.06¾	@	.07
New Light Flannelettes	.07½	@	—
Silesias No. 1	.07½	@	.07¾
New Black Silesias	.04¼	@	.04½
Soft Unbleached	.09¼	@	.09½
Blue Cheviot	.07¼	@	.07½
Fancy	.03¾	@	.04
Washable	.03	@	.03¼
Kraft, M. F.	6.00	@	—

Cottons—According to grades—			
Blue Overalls	.07¼	@	.07½
New Black, soft	.04¼	@	.04¼
Khaki Cuttings	.04½	@	.04¾
O. D. Khaki	.04¾	@	.05
Corduroy	.03¼	@	.03½
New Canvas	.07¾	@	.08¼
B.V.D. Cuttings	.08¾	@	.09

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Third and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.35	@	1.45
No. 2	1.12½	@	1.20
No. 3	.95	@	1.00

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.50	@	1.60
Dutch Blues	3.00	@	3.15
New Checks and Blues	2.85	@	3.00
Old Fustians	2.50	@	2.75
Old Linsey Garments	2.10	@	2.25
New Silesias	6.50	@	7.00

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.08	@	.08½
New White, No. 2	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.07	@	.07½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.02	@	.02½
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	2.00	@	2.25
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02¼
New Canvas	.04	@	.04½
New Black Mixed	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	2.25
Repacked	2.50	@	2.75
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	2.00	@	2.10
Domestic No. 2	1.90	@	2.00
Roofing Bagging	1.75	@	—

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	4.50	@	—
Sisal Rope	3.00	@	—
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.25	@	2.50
No. 2	1.00	@	1.10
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	—	@	2.60
No. 2 Hard White	2.20	@	2.25
No. 1 Soft White	2.00	@	2.10
No. 2 Soft White	1.75	@	—
No. 1 Mixed	—	@	.85
Solid Ledger Stock	—	@	1.75
Ledger Stock, white	1.75	@	—
Ledger Stock, colored	1.50	@	—
No. 1 Books, heavy	1.20	@	1.25
Manila Cuttings	1.80	@	1.90
Print Manila	.75	@	.85
Container Manila	.80	@	—
Kraft Paper	1.75	@	—
No. 1 Mixed Paper	.60	@	.65
Straw Board Chip	.50	@	—
Binders Board Chip	.50	@	—
Corrugated Board	.70	@	.80
Overissue News	.75	@	.80
Old Newspapers	.60	@	.65

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.20	@	2.35
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.30	@	1.50
Mixed Ldgers	.85	@	.90
No. 1 Books, heavy	1.10	@	1.20
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.60	@	1.70
Manila Env. Cuttings, extra quality	2.20	@	2.30
No. 1 Old Manila	.95	@	1.00
White Blank News	1.30	@	1.40
No. 1 Kraft	1.70	@	1.75
Mixed Papers	.45	@	.55
Print Manila	.70	@	.75
Container Manilas	.27½	@	—
Old Newspapers	.55	@	.60
Overissue News	.50	@	.65
Box Board Chips	.45	@	.50
Corrugated Boxes	.70	@	.75
Kraft corrugated boxes	1.45	@	1.50
Screening Wrappers	.60	@	.65

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	4.15	@	4.25

CHICAGO

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	3.30	@	3.40
No. 1 Hard White	2.60	@	2.70
No. 1 Soft White	2.10	@	2.15
Ledger & Writings	1.40	@	1.50
Solid Books	1.25	@	1.30
Blanks	1.50	@	1.65
Krafts	1.00	@	1.25
New Kraft Cuts	1.80	@	2.00
Manila Env. Cuts	2.20	@	2.35
Ex. No. 1 Manila	2.20	@	2.35
Print Manila	1.70	@	1.80
Overissue News	.80	@	.90
Old Newspapers—			
No. 1 Folded News	.80	@	.90
No. 1 Mixed Paper	.80	@	.90
Roofing Stocks—			
No. 1	2.00	@	2.25
No. 2	1.85	@	2.00

TORONTO

Paper

Bonds and Ledgers

Delivered

No. 1 White	.35½	@	.36½
No. 1 Tints	.36½	@	.37½
No. 2 White	.26½	@	—
No. 2 Tints	.27½	@	—
No. 4 White	.15	@	.1550
No. 4 Tints	.16	@	.1650
No. 5 Bond—White	11.35	@	—
No. 5 Bond—Tints	12.35	@	—
No. 5 Bond—Golden Rod	13.35	@	—
No. 5 Ledger—White	.11½	@	—
No. 5 Ledger—Tints	.12	@	—
No. 6 Bond—White	10.75	@	—
No. 6 Bond—Tints	11.25	@	—
No. 6 Bond—Golden Rod	12.75	@	—
No. 7 Bond—White	9.10	@	—
No. 7 Bond—Tints	9.70	@	—
No. 7 Bond—Golden Rod	11.20	@	—
Book—			
No. 1 M. F.	7.10	@	7.35
No. 2 M. F.	6.85	@	7.20
No. 3 M. F.	5.60	@	6.20
No. 1 S. C.	7.60	@	7.85
No. 2 S. C.	7.00	@	7.35
No. 3 S. C.	6.10	@	6.35
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.00	@	—
No. 3 Coated and Litho	9.50	@	10.00
Coated tinted	13.00	@	13.50
Wrapping—delivered—			
Rag Brown	4.85	@	5.55
White Wrap	4.00	@	—
"B" Manila	4.90	@	6.25
No. 1 Manila	5.50	@	7.00
Fiber	5.50	@	—
Kraft, No. 2	5.50	@	—

(F. o. b. Cars, Toronto)

News, per ton—			
Rolls (contract)	38.50	@	—
Sheets	45.50	@	—

Pulp

Ground wood	30.00	@	31.00
Unbleached Sulphite	52.00	@	53.00
Book (Class 1)	65.00	@	66.00
Writing (Class 2)	66.00	@	67.00
Select (Class 3)	67.00	@	68.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.50	@	—
Soft White	2.15	@	—
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.00	@	—
Light and Crumpled Book Stock	.85	@	—
Ledgers and Writings	1.20	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	.70	@	—
Kraft	1.00	@	1.70
News and Scrap—			
Strictly Overissue	.75	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09	@	.09½
Fancy Shirt Cuttings	.03¼	@	.04